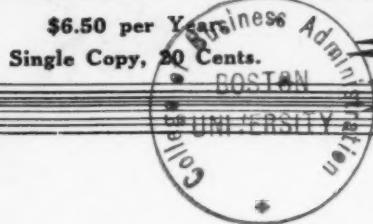


# Manufacturers Record

## Industry Construction



\$6.50 per Year  
Single Copy, 20 Cents.

BOSTON

Baltimore, Md.  
JULY 10, 1930

## Omens of Better Business

The turn of the mid-year is a starting point for an upward swing of business. The new tariff bill is behind us, giving a measure of protection to agriculture as well as to manufacturers. Public work under way is greater than for this same period of 1929, with every prospect that the volume for the latter half of the year will be equally as large. In the South alone, contracts awarded during the first six months of 1930 for all types of construction work amounted to more than \$537,000,000; at the beginning of July there is in sight \$637,000,000 of building, industrial and engineering projects planned and proposed, setting a pace for the entire country. Industry is operating more efficiently, having been freed of some of the deadwood and softness engendered by several years of easily acquired prosperity. Money is abundant and cheap, giving the opportunity for constructive enterprise.

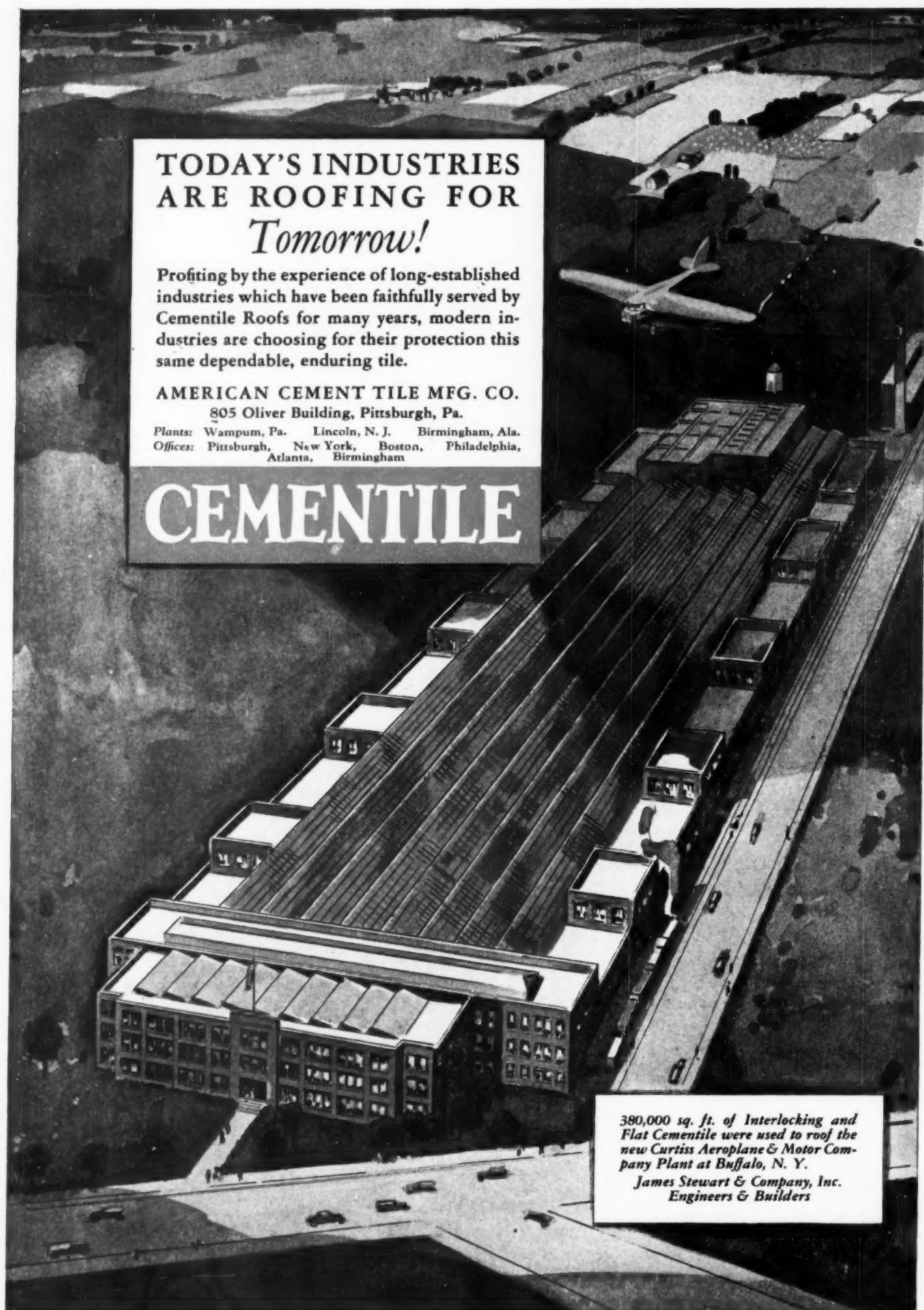
Dividend disbursements for the past month, compared with June, 1929, showed a 14 per cent gain, and it is important to note that many corporations have maintained dividends since last fall on an even greater number of outstanding shares than existed a year ago, indicating general soundness of the financial structure of the country.

During one of the worst depressions, in mid-July, 1921, with world deflation and falling prices disorganizing trade, the Manufacturers Record predicted — "substantial improvement from now on, the movement getting under way this month and gathering momentum thereafter. It will be a different autumn from that experienced last year." That forecast, we believe, could be fittingly applied to the present situation, for nine years ago pessimism also rode in the saddle and many people could see only disaster ahead. Then as now they failed rightly to judge the inherent ability of the American people to rebound from adversity.

A return of confidence, evidence of which is found in the changed attitude of the public press, will bring buyers into the market and set in motion a spirit of initiative and enterprise which has been lacking in recent months. That spirit, turned into business channels, can be made to quicken the life of all business activity.

Better crops, as now indicated, will stimulate farmer buying. Prevailing low prices should stimulate building. For the man who wants to build a fence or a factory, we believe this can be done to better advantage today than at any time within the next 12 months. Now is the time for the manufacturer to prepare for increasing demands of the future. Goods are being consumed; clothing as well as machinery wears out and people again will be compelled to make replacements.

Measured by past periods of inertia, the pendulum upswing of business comes as day follows night.





## ***There's Nothing Like It***

A cool breeze rippling through the pines—fish that fight—and the old plant at home completely forgotten.

Before you go, leave the vacation order that eliminates any worry over steel deliveries. Just say, "Call Ryerson when you need steel." Immediate shipment is assured.

**JOSEPH T. RYERSON & SON INC.**

Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City  
Representation in: Minneapolis, Tulsa, Houston, Dallas, Kansas City, Rockford, Newark,  
New York, Denver, Los Angeles, San Francisco

**RYERSON**  
STEEL - SERVICE

**TALK NUMBER SEVEN BY A PROMINENT DISTRIBUTOR**

## **"Make Our Warehouse YOUR Warehouse**



Above—Mr. R. L. Efurd, President of the Efurd Welding and Machine Company, Inc., of Shreveport, Louisiana. This company's services are of a definite economic value to the prosperity of its business territory.

**I**OUR WAREHOUSE properly used will save you, the consumer, payroll expense. Even when space is available some one must be in attendance to maintain order and check merchandise items in and out of stock. With us it's a matter of daily work, and wherever the functions are duplicated, waste effort is the result.

If consumers would use us more our services and prices would become even more attractive. We recommend Republic's Belting—Hose—Packing—Molded and Lathe Cut Goods."

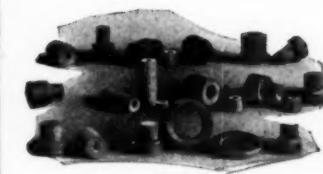
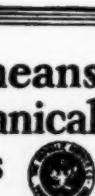
The above statement is characteristic of those made by prominent distributors all over the country. It explains in part how the Industrial Supply Distributor, helping to solve the important problem of broad markets and economical distribution, upholds high quality, maintains fair prices and saves needless efforts on the part of both consumer and manufacturer.

### **THE REPUBLIC RUBBER CO.**

**Youngstown  
Ohio**

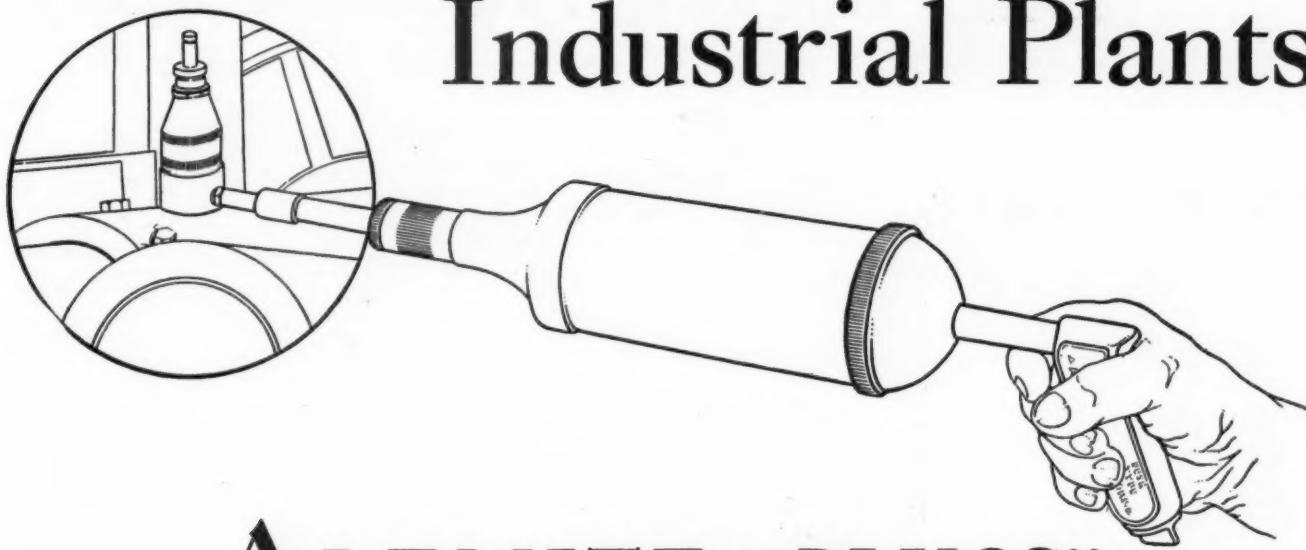


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the Best Mechanical  
Rubber Goods**



Republic has had many years experience in developing molded goods for nearly every known purpose. This experience, plus sufficient equipment to handle all kinds and sizes of material promptly, is your best reason for submitting your molded goods problems to Republic's representatives.

# In Ten Thousand Industrial Plants



## ALEMITE "PLUGS" PRODUCTION WASTES

**A**NTIQUATED oil-hole and grease-cup lubricating methods must go. With present high-speed production comes a more careful scrutiny of manufacturing costs—and here the Alemite High Pressure Lubricating System plays a most important part. Its widespread, constant growth clearly points the trend.

Intense competition in all fields of industry has placed a premium on production maintenance and the reduction of overhead costs. Hence, universal approval of this modern lubricating plan that matches modern machinery and modern manufacturing methods.

Alemite solves all lubricating problems. Today, in ten thousand plants, Alemite High Pressure Lubrication is increasing production—cutting operating costs. They find that it brings longer life to expensive machinery, greater efficiency and freedom from repairs. This translates directly into money saved in labor—in lubricants—in protection to materials in process.

Since its inception, Alemite has met progress with progress in the industrial world. In recognition of

the tremendous advantages offered by this new method of lubrication, more than 1100 leading manufacturers of machinery are now using Alemite as standard equipment on their products. For Alemite gives a protection service never before possible.

The benefits of this modern lubricating plan are available to you at once. You need not wait for new machinery—it is a simple matter to modernize your present equipment as far as lubricating goes. A remarkably small investment puts your plant on a systematic basis that plugs production leaks.

An Alemite System for every need is quickly and easily installed, whether for button head, pin, push or dot type fittings. There can be no

wasted lubricant with this system, and bearings are cleaned of all grit and dirt when they are lubricated.

This positive lubricating system ends the costly inefficiencies of oil soaked floors and machinery—of break-downs that cut into production. It saves losses in damaged materials. Even substantial reductions in power costs are effected.

Write today for complete details of the savings now made possible by Alemite.

Alemite Corporation (Division of Stewart-Warner), 2686 N. Crawford Ave., Chicago, Ill.

## ALEMITE

*High Pressure Lubrication  
for Modern Industry*

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2686 N. Crawford Ave., Chicago

Please send me complete details of the savings now made possible by Alemite.

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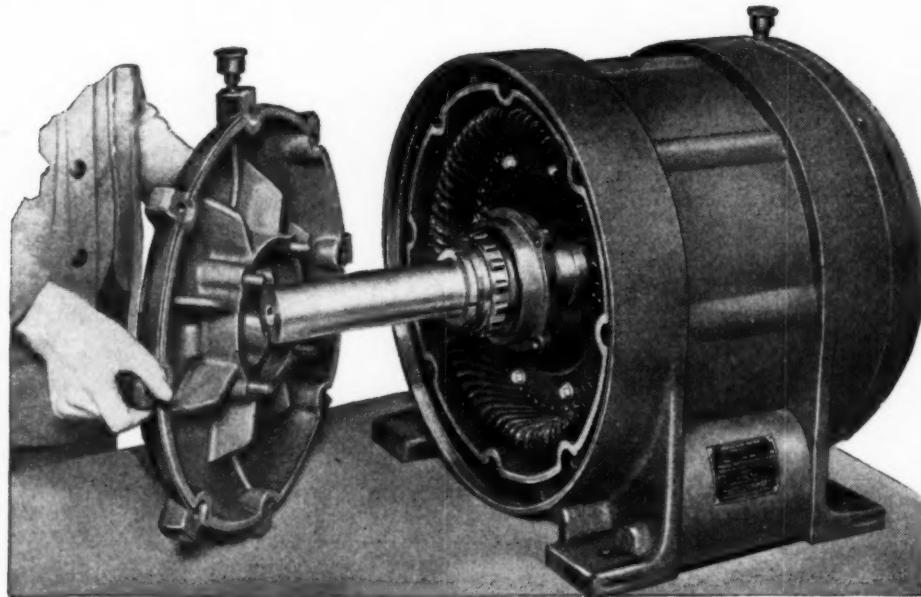
Your Name.....

City.....

State.....

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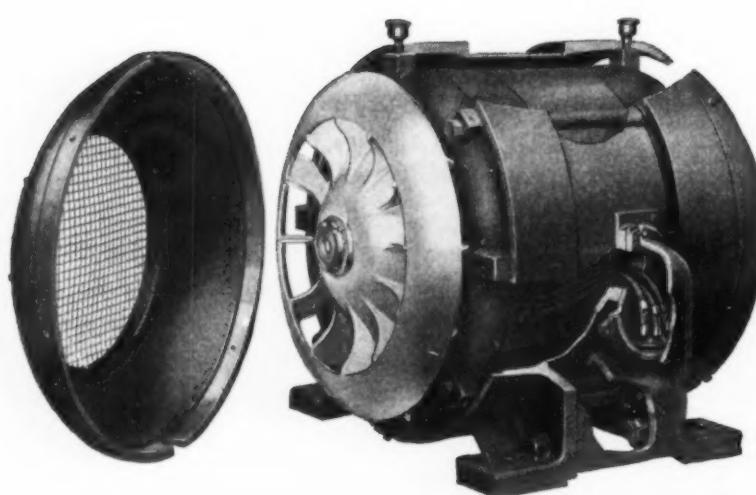
# Completely Enclosed without Sacrificing Accessibility



## **type ARZ fan-cooled motors**

Protection to the motor windings with complete accessibility to all parts . . . that was the thought in mind when the Allis-Chalmers type "ARZ" motor was developed. The active parts of this motor are completely enclosed, protecting the stator windings and the rotor — those parts that are subject to injury — from dirt, dust, metallic chips, sulphurous gases, acids, etc.

End closures and bearing supports, including lubricating devices, are combined into single castings with machined fits and make this motor as accessible as the conventional open type. There are no rubbing or revolving seals and no separately attached coil enclosing devices. Cooling air is furnished by a single fan keyed and locked on a short shaft extension opposite the drive end. The mounting space of this enclosed motor is the same as the open type in most ratings.

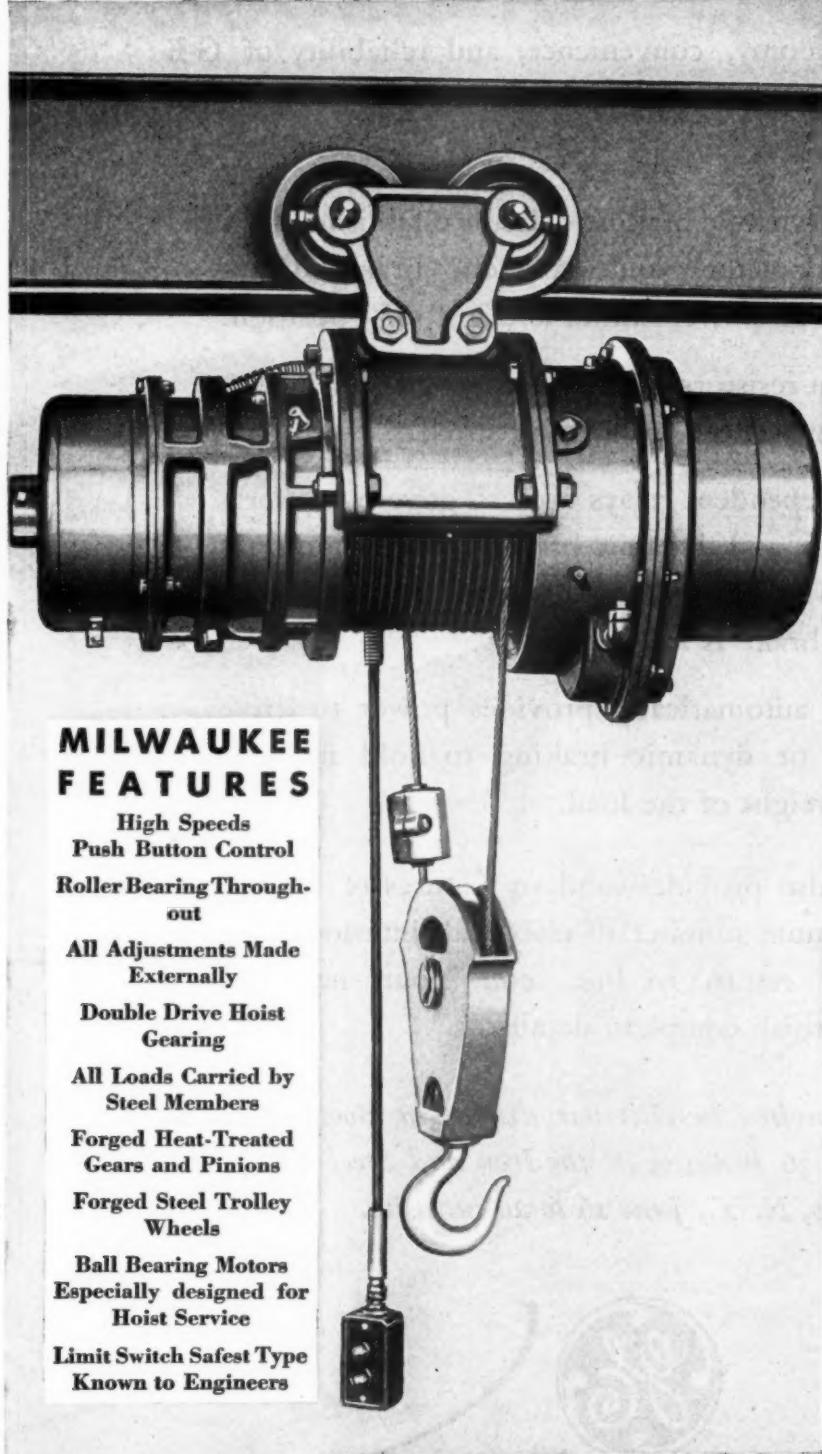


Leaflet 2109 tells about these and other standard Allis-Chalmers features. . . . Write for a copy.

# **ALLIS-CHALMERS**

Allis-Chalmers Manufacturing Company, Milwaukee

# Milwaukee Hoists



## MILWAUKEE FEATURES

- High Speeds
- Push Button Control
- Roller Bearing Through-out
- All Adjustments Made Externally
- Double Drive Hoist Gearing
- All Loads Carried by Steel Members
- Forged Heat-Treated Gears and Pinions
- Forged Steel Trolley Wheels
- Ball Bearing Motors Especially designed for Hoist Service
- Limit Switch Safest Type Known to Engineers

**...product of the  
World's largest  
staff of crane and  
hoist engineers**

**A**LL THE experience gained in more than thirty-five years of electric crane and hoist building finds expression in Milwaukee Hoists . . . the joint product of P&H and Milwaukee Crane engineers.

Just as you have become accustomed to dependable performance in P&H and Milwaukee Cranes, so you may expect dependable performance in Milwaukee Hoists, created by the same engineering talent and supported by the combined resources and facilities of these two great organizations.

Milwaukee Hoists are designed and built for very high speed operation . . . a necessity in this day of high speed production. Simple construction and the use of high grade materials throughout assures low cost maintenance. Some specific features of construction are shown in the illustration at left. Whether you contemplate an immediate hoist purchase or not write for complete data on Milwaukee Hoists.

**MILWAUKEE ELECTRIC CRANE & HOIST CORPORATION**  
*Division of Harnischfeger Corporation*  
MILWAUKEE, WISCONSIN



# MILWAUKEE

LOW HEADROOM CRANES 3 TO 30 TONS  
STANDARD CRANES TO 50 TONS

# G-E Crane Control

THE safety, economy, convenience, and reliability of G-E crane control are best exemplified by these fundamental features:

1. Emergency dynamic braking (circuit established by a spring-closed contactor) and magnetic brake always effective in case of power failure and in "off" position.
2. Independent resistors used for lowering-speed adjustments without any effect on hoisting speed.
3. Entirely independent relays used to govern acceleration, deceleration, and dynamic braking so that motor is retarded to a very low speed (less than 20 per cent) before solenoid brake is applied.
4. Each point automatically provides power to drive the load down or dynamic braking to hold it back, depending on weight of the load.

G-E crane control also provides modern features of low power consumption, minimum number of electrical interlocks, creeping speeds, power return to line, etc. Your nearest G-E office will gladly furnish complete details.

*You are cordially invited to visit our display in Booths 11 to 16 inclusive, and 31 to 36 inclusive at the Iron and Steel Exposition, Buffalo, N. Y., June 16 to 20 inclusive.*

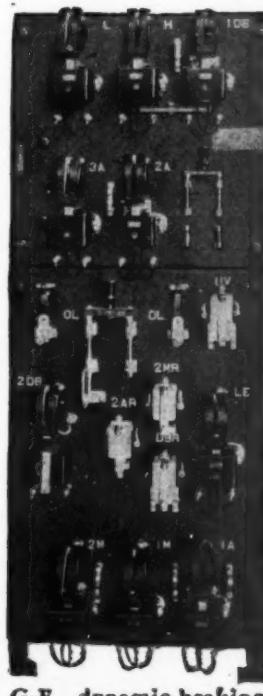
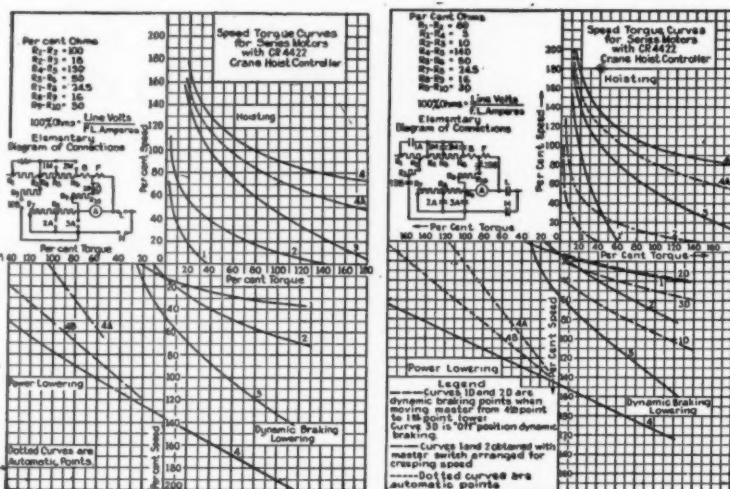


**GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y.**

# No better has ever been developed for crane service

## Yesterday →

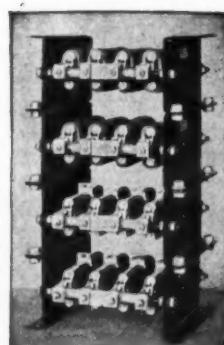
—in 1916, a paper appearing in the proceedings of the Association of Iron & Steel Electrical Engineers, set forth the advantages of G-E crane control illustrated in part by these characteristic curves.



G-E dynamic-braking crane-hoist panel for series motors

## ← To-day

—in 1930, these fundamental curves are just as representative of the best crane-control practice as they were in 1916—they are the characteristic curves of a modern G-E crane-control system.



G-E nonbreakable, edge-wise-wound resistor consisting of 4 unit boxes

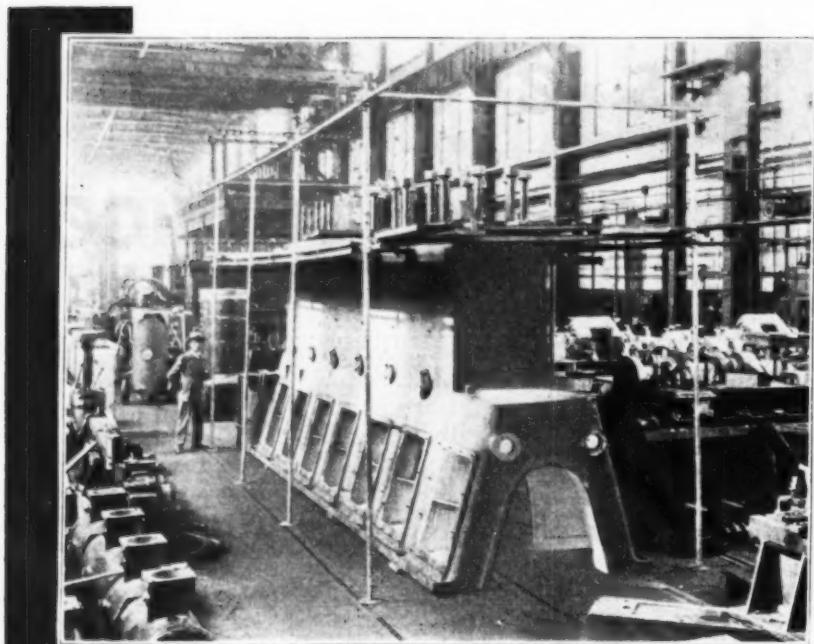
G-E cam-operated 4-point reversing master switch

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Successors to TALK & MURDOCH CO.  
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Repairs to Steel and Wooden Vessels  
8,000-ton Dry Dock—1,500 and 600-ton Marine Railways  
CHARLESTON, S. C.

# PERFECT CONTROL of the Dipper

PAGE  
11

Crowd down, right in front of  
the crawlers!

Cut a hair-fine grade!

"Jocky" stone into the dipper!

Secure the unequalled digging force that is  
the result of eliminating division of power  
between crowd and hoist.

Trim a bank or ease boulders from the bank  
to the grade—and crowd out beyond the boom  
without the crowd pulling against the hoist.

Never was such perfect dipper control with-  
out waste of power offered the contractor or  
basement excavator.

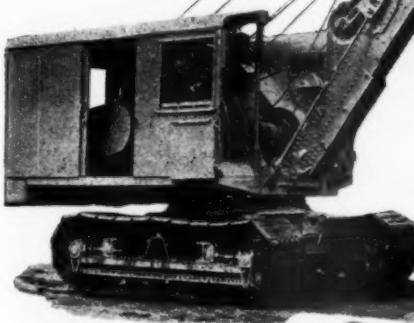
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MR 7-10 Gray

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**Mountain State Steel Foundries**  
**ELECTRIC**  
**Steel and Alloy Casting Specialists**  
 Eight ounces to  
 Five hundred pounds  
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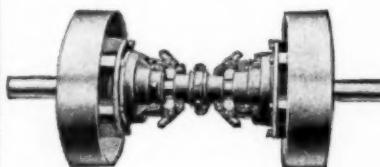
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 COLUMBUS, GEORGIA

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**HANGERS** SHAFTING

Couplings, Pillow Blocks, Floor Stands, Collars, etc.

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**S-24 Rotary Shear**  
 Capacity 16 ga. or lighter soft steel. 2 speeds. Cuts on 2" radius or larger. Cuts circles, rings, pattern sheets, segments. Belt or motor drive. Write us.  
**THE YODER COMPANY**  
 5510 Walworth Ave. Cleveland, Ohio



## 9 Men Did the Work of 12

An eastern S. S. company cites the case. Cargo to be moved quickly. And cargo meant countless sizes and shapes from kegs to cases, from sacks to rolls, barrels, bales.

Twelve men and twelve hand trucks usually tackled the job. This time, nine men, three AMERICAN Trucks and nine AMERICAN Pressed Steel Truk-Paks took command.

Three men loaded Truk-Paks in the hold. Three others unloaded Truk-Paks on the wharf. Three more kept up a continuous round trip circuit, picking up loads on the jump, carrying back empty Truk-Paks for reloading.

Results: The ship cleared by nine men in the same length of time twelve would normally have required—no spilling of loads en route—no congestion—no lost or damaged merchandise.

It is the constant endeavor of The American Pulley Company not only to produce truck handling equipment that will give better, more economical service over a longer period of time, but also to develop improved truck handling methods, offering you further savings in time, labor and money.

Whatever your handling problem, investigate AMERICAN Pressed Steel Hand Trucks—light, strong, durable, built to wear without repair. Ask about the new AMERICAN Pressed Steel Truk-Paks that offer lift truck service at hand truck cost.

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4200 Wissahickon Avenue, Philadelphia

Pressed Steel: Shafting Pulleys, Hangers, Hand Trucks, Miscellaneous Stampings. Sprucolite (Compressed Spruce) Motor Pulleys, Machine Pulleys.



### ... SAVE WITH PRESSED STEEL

AMERICAN Metal Stampings are saving manufacturers in many ways.

The makers of a closely priced auto accessory realize an additional profit by saving it through the use of AMERICAN stampings that weigh less, need no machining, will not break.

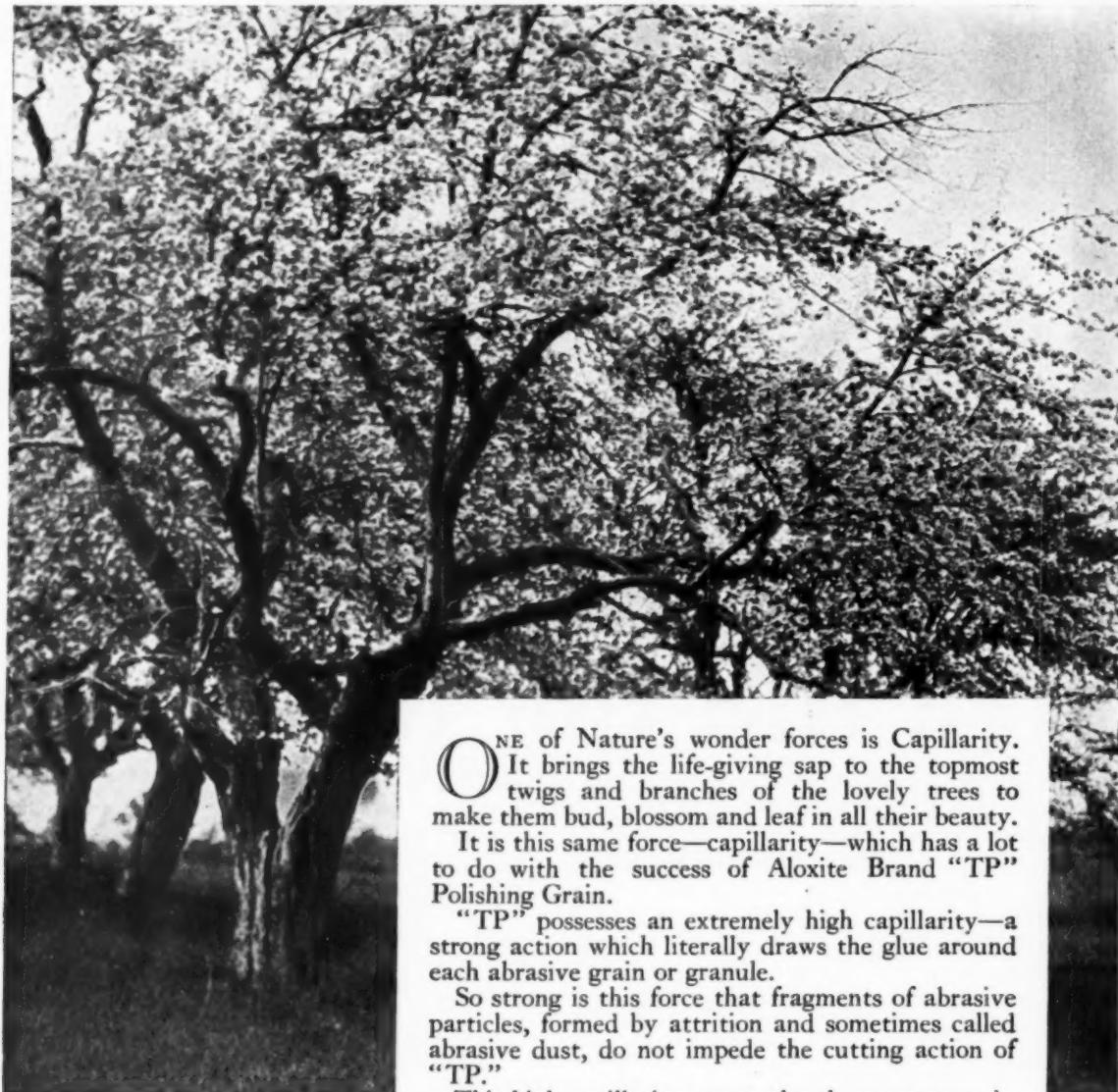
A radio manufacturer stopped casting an important part and had it cold pressed at a 25% saving.

A manufacturer of projectiles equipped them with AMERICAN cold drawn steel cones instead of forgings—saving weight, production cost, material—gaining distance, firing accuracy.

What part can we make for you at a saving? Send us your blue prints for an estimate.

**AMERICAN**  
METAL  
**STAMPINGS**

## SUCH A FORCE IS CAPILLARITY



ONE of Nature's wonder forces is Capillarity. It brings the life-giving sap to the topmost twigs and branches of the lovely trees to make them bud, blossom and leaf in all their beauty.

It is this same force—capillarity—which has a lot to do with the success of Aloxite Brand "TP" Polishing Grain.

"TP" possesses an extremely high capillarity—a strong action which literally draws the glue around each abrasive grain or granule.

So strong is this force that fragments of abrasive particles, formed by attrition and sometimes called abrasive dust, do not impede the cutting action of "TP."

This high capillarity causes the glue to squeeze in and around every "nook and cranny"—every depression in every abrasive particle surface.

Then surface tenacity that other outstanding property of "TP" comes into play and holds the grain securely till it has done its life's work.

Consider also that "TP" is hard, sharp, tough—accurately graded—free from flats and splinters—and that it packs on the set-up wheel.

## Aloxite Brand "TP" Polishing Grain

REG. U. S. PAT. OFF.

*It holds while it Cuts while it Polishes*

The CARBORUNDUM Company, Niagara Falls, N. Y.

REG. U. S. PAT. OFF.

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DESKS, tables, radio cabinets and general furniture lines are now packed in Kimpak Crepe Wadding to protect from damage in shipment.

ONLY because Kimpak increases profits ... through reducing "red ink" adjustments, replacements, complaint costs, etc.

Kimpak Crepe Wadding is a wood fibre product, soft as down, snow white, resilient, clean. It looks expensive—thus doubly impresses customers with your quality and with the extra care you take to insure their satisfaction. (But it is surprisingly inexpensive.) You'll find, too, that it cuts packing time. If you wish, our service man will gladly help you with his wide experience in packing similar products.

*Kimpak comes in rolls, sheets or pads—in any thickness you wish, plain or with kraft paper on one or both sides.*

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REG. U.S. PAT. OFF. & FOREIGN COUNTRIES  
CREPE WADDING

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Send me a free sample roll of Kimpak to try.

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City.....

MR-7

Note the luxurious blanket of kraft-backed white Kimpak, with a few inches lap over all edges, affording perfect protection and eliminating the old-fashioned "bustle." "We use Kimpak over our table tops in direct contact with our finish and suspend tables with steel strapping, as suggested by the Freight Container Bureau. . . . We have cut down our damage and breakage quite materially."

CONANT, BALL COMPANY, Gardner, Mass.

*Hubert E. Burleson*



*Another Connors Job!*

CONDUCTORS HOME, SAVANNAH, GA.

Wallis & Comer, Savannah, architects  
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Jas. Stewart Co., New York, contractors

We are proud of our part in this beautiful structure. Connors reinforcing bars were selected after careful deliberation of the builders. And Connors famous service established new records in prompt shipment on the job.

Connors Reinforcing Bars are made of highest quality rail steel . . . tested to meet rigid specifications. Write for prices.

**CONNORS REINFORCING BARS.**

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ORNAMENTAL IRON — GREY IRON CASTINGS  
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ROANOKE IRON & BRIDGE WORKS, Inc.  
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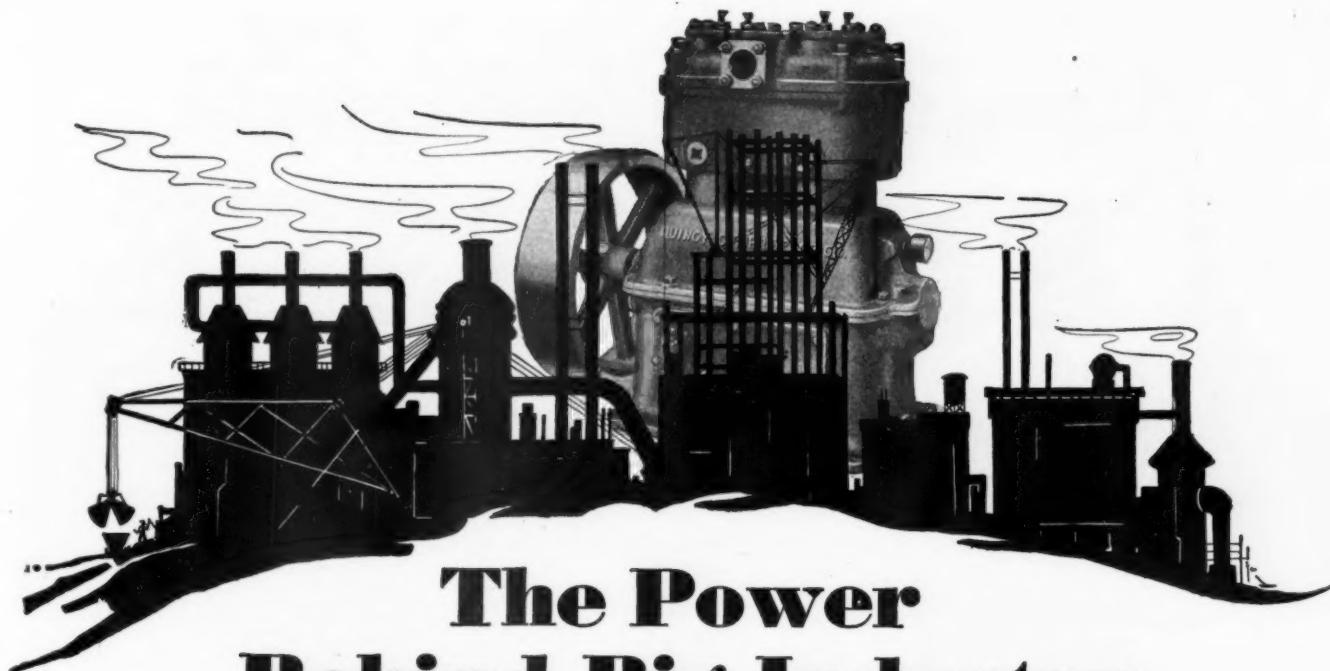
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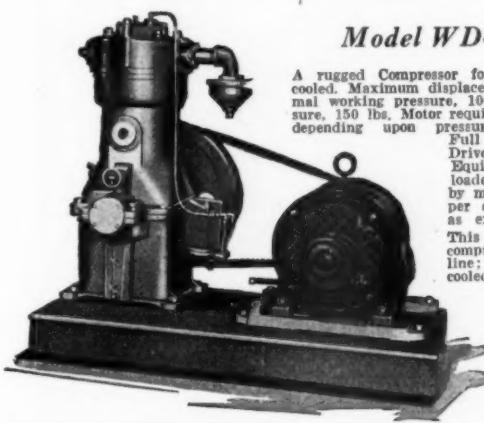
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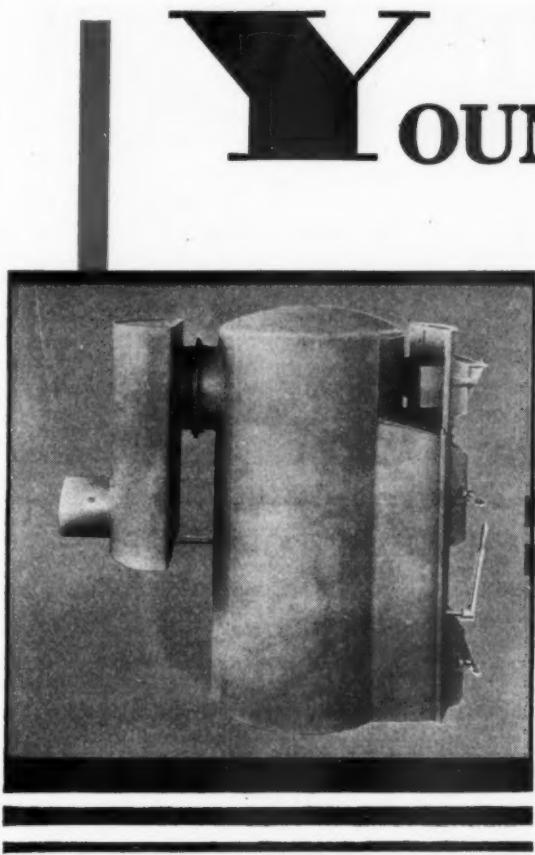
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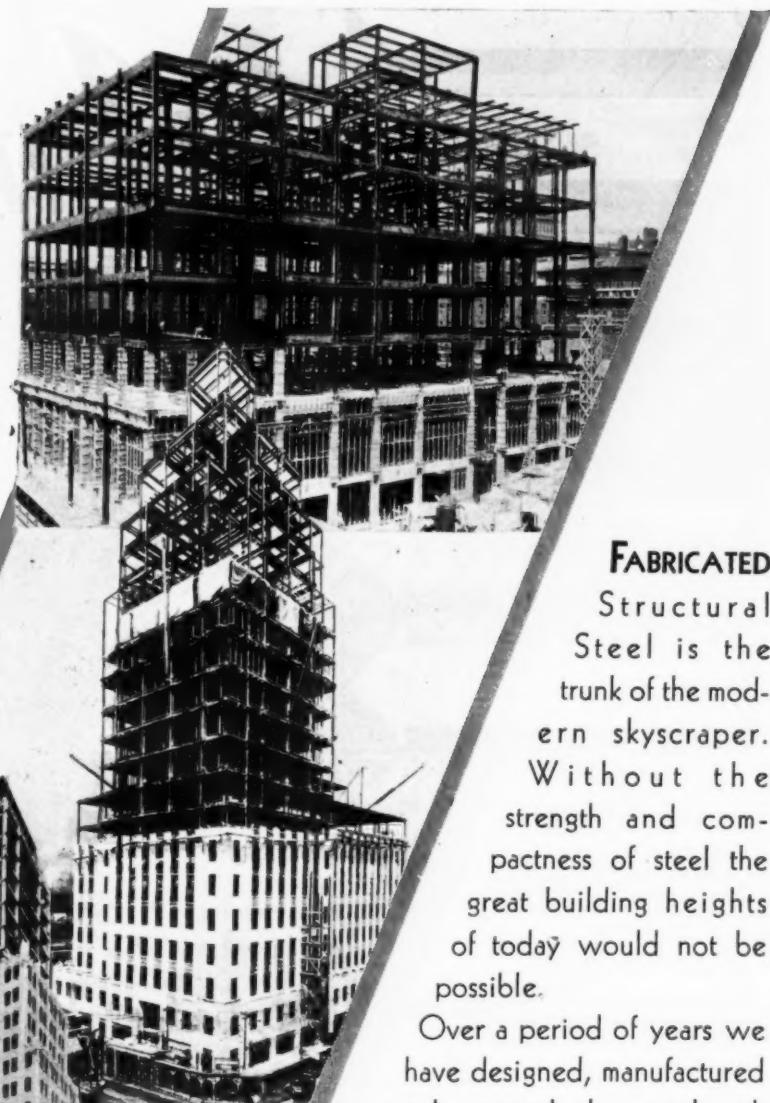
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A STRONG TRUNK—  
OTHERWISE IT WOULD  
NOT GROW TO BE  
TALL**

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Lower Center: Sterick Building, Memphis, Tenn. Wyatt C. Hedrick, Fort Worth, Texas, Architect.

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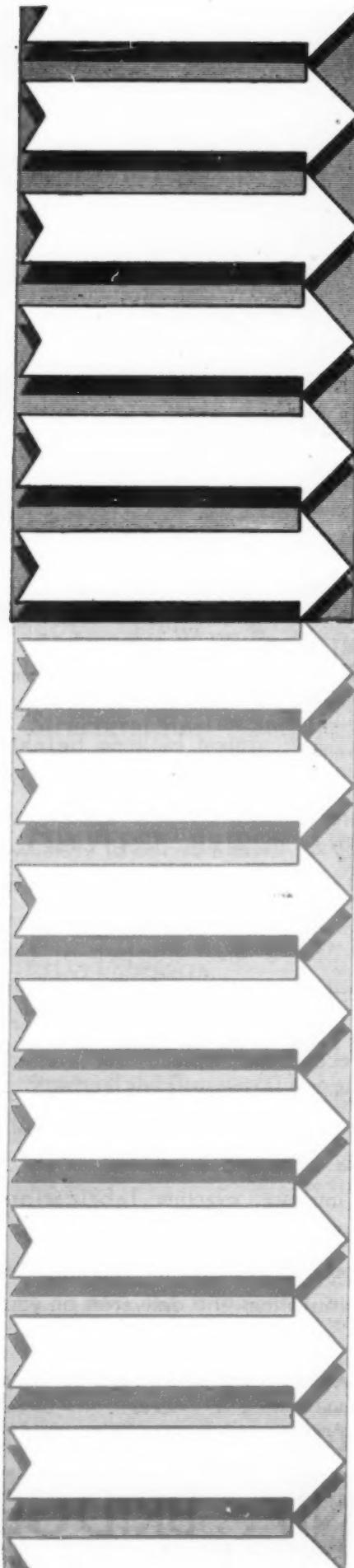
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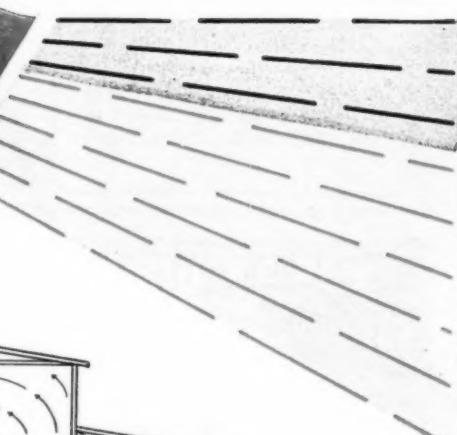
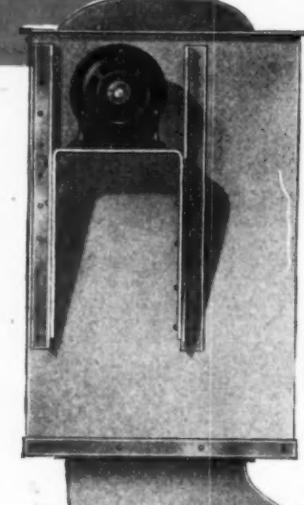
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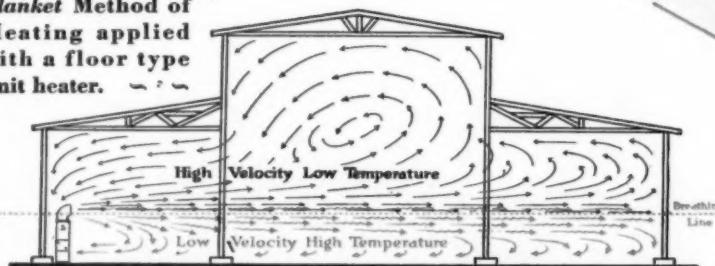


# *Announcing* **AIR** *method*



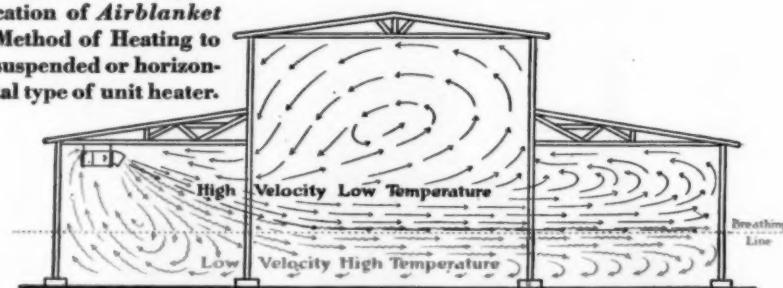
## FLOOR TYPE

Diagram shows *Airblanket* Method of Heating applied with a floor type unit heater.



## HORIZONTAL TYPE

Diagram shows application of *Airblanket* Method of Heating to suspended or horizontal type of unit heater.



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# *the new Skinner*

# **BLANKET**

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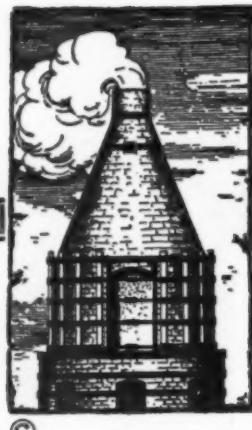
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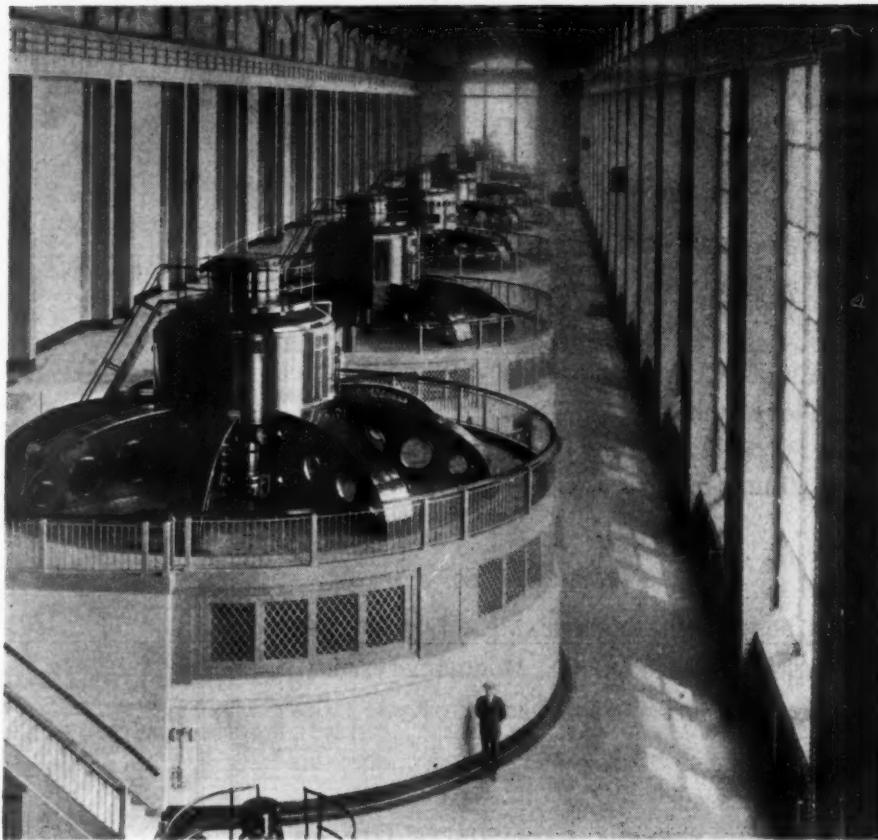
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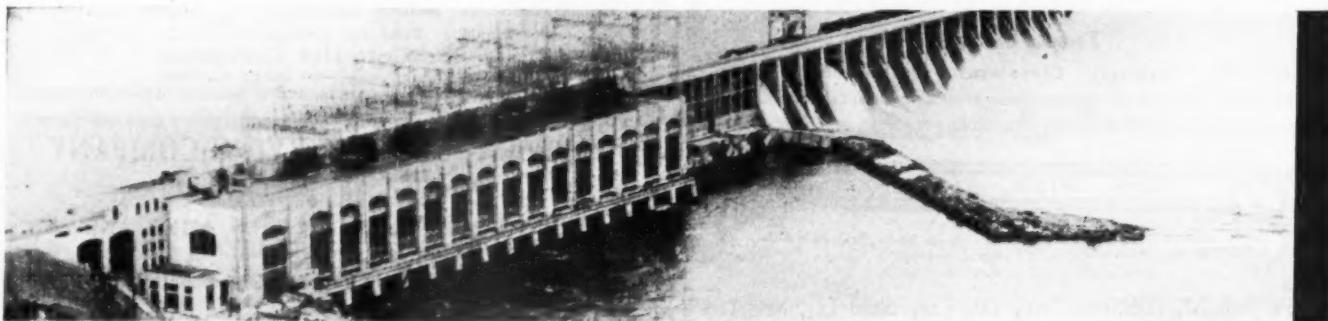
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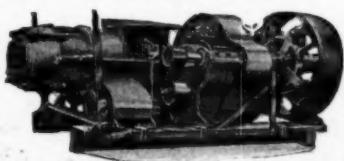
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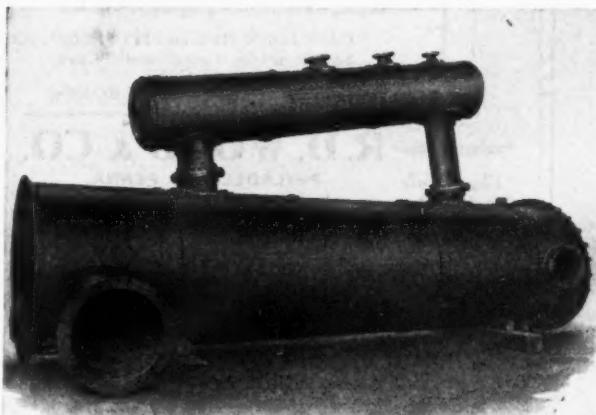
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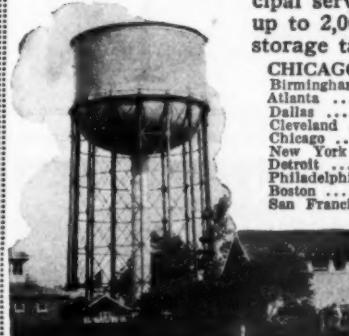
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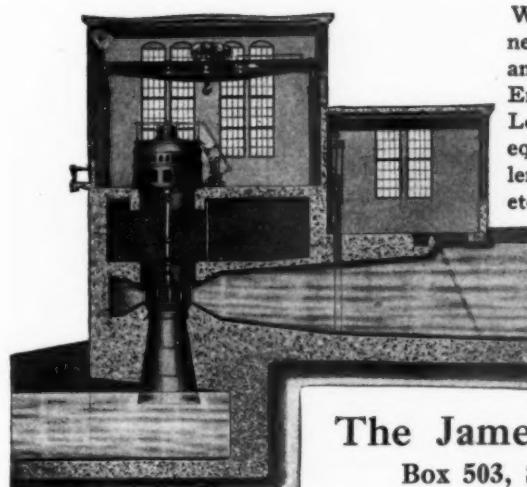
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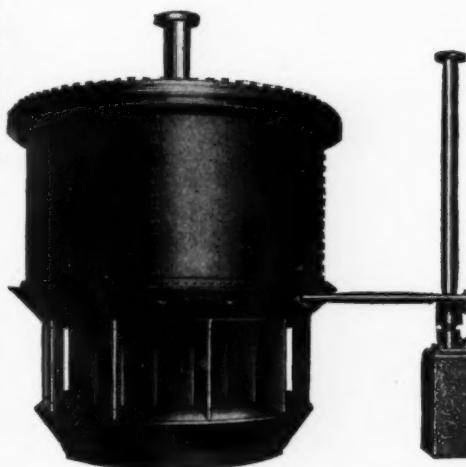
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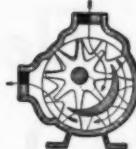
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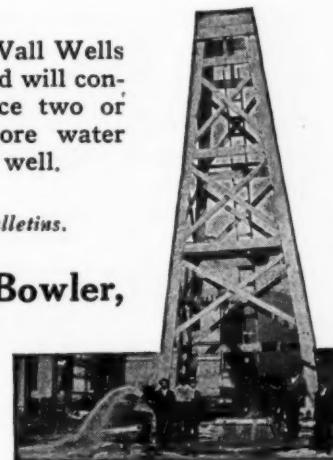
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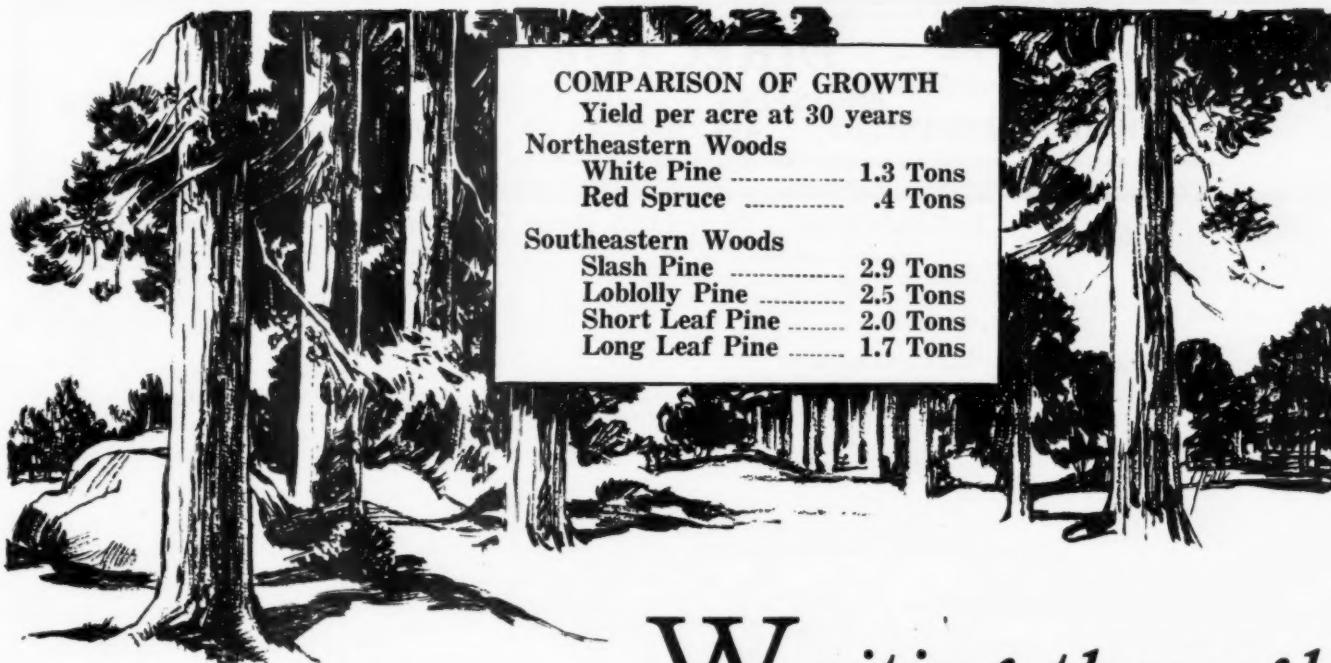
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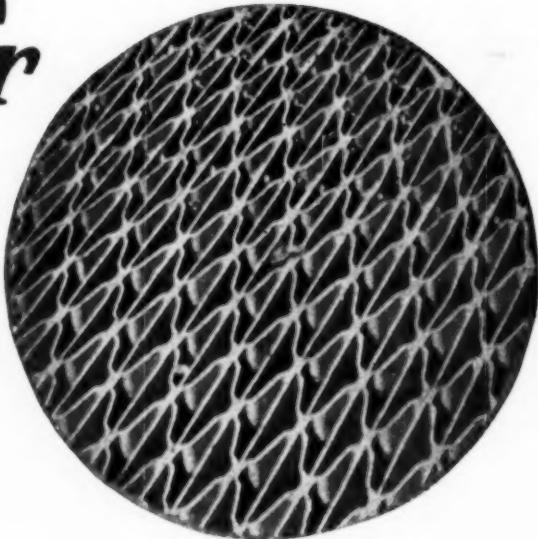
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Baltimore, Md., July 10, 1930

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RICHARD H. EDMONDS, Editor

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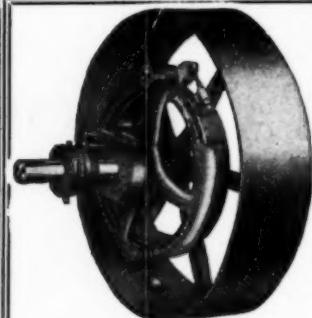
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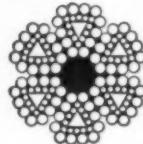
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# Manufacturers Record

Reg. U. S. Pat. Office

Devoted to the Upbuilding of the Nation Through the Development  
of the South and Southwest as the Nation's Greatest Material Asset

Vol. XCIII No. 2  
Weekly

BALTIMORE, JULY 10, 1939

{ Single Copies, 20 Cents.  
\$6.50 a Year.

## Industrial Development of Small Towns Back-bone of South's Remarkable Progress

IT is the smaller cities of the South that have made such rapid industrial growth in recent years. Scattered throughout the states from Maryland to Texas, they have been the backbone of a development which has attracted the attention of the industrial leaders of the nation. The small town is likewise reaching up to city rank and in countless instances the small town of 20 years ago has become the industrial city of today.

Some pertinent facts were presented on the future of the small town in a recent address by George M. Crowson, assistant to the first vice-president of the Illinois Central System. He discussed the subject with particular reference to industrial development, pointing out the trend of the present. Calling attention to the contribution that small towns have made to the outstanding leadership in the larger centers of population, Mr. Crowson referred to the very practical fact that the small towns are the centers of life, social as well as economic, of substantially more than half our total population, and the future of the small town is something that vitally concerns us all. He had no definite population limit set for his classification of the small town, but was speaking broadly of towns and cities other than the great centers of population.

"The industrial trend is definitely away from our great cities," said Mr. Crowson, offering as an illustration the city of Chicago, as the center of the meat packing industry, a city which in the last 30 years has doubled the output of its packing houses. But the proportion of Chicago's output to that of the entire country has dropped from 36 per cent to 18 per cent. Philadelphia, as the center of carpet and rug manufacturing of the country, in the last 30 years has doubled its carpet and rug production but the proportion of Philadelphia's output to that of the entire country has dropped from 46 per cent to 28 per cent. "Everyone," Mr. Crowson says, "is familiar with the stupendous growth of the textile manufacturing industry in the South, where it has become a billion dollar industry. Many textile establishments of New England have been moved bodily to Southern

towns, while other interests in the East have built new mills in the South. Alabama, for instance, has 69 cotton mills and of these only five are located in the three major cities of the state. Georgia, since 1900, has increased its industrial production from less than \$100,000,000 to more than \$600,000,000 a year. The 16 Southern states as a whole have increased production since 1900 from about \$1,500,000,000 to more than \$10,000,000,000. Recently three great industries were established in Tennessee—a rayon plant, an aluminum plant and a printing house. The sites chosen are not the larger cities, but rural communities in the mountains. In the two years 1926 and 1927 there were 10,000 manufacturing plants established new or relocated in this country, not in a few large cities, but in 2,000 different cities and towns."

The value of industrial production in towns of less than 10,000 population in 1925 was only slightly less than the value of all the country's industrial production in 1909.

Rural industrial expansion has been immensely helpful to agriculture by the enlargement of home markets for food products. For example, the most important industrial development in Mississippi in recent years has been in the manufacture of dairy products. Farmers are receiving about \$14,000,000 a year from this industry.

The railroads have been most helpful to small towns in bringing in new industries. For years they were almost the sole means through which the small town could look for aid in furthering its industrial expansion. The Illinois Central, through its Industrial Development Department, has cooperated with the communities, studying their problems and developing their industrial possibilities. Supplementary to this work, the Illinois Central employed a corps of industrial engineers to make a comprehensive survey of its territory, map the resources of raw materials and compile and disseminate information on tax matters, labor, supplies, wage scale, working conditions and other essential facts.

Such upbuilding work on the part of railroads in late years has been supplemented by the activity of

the power companies of the South. They also are playing an important part in bringing in new industries and by supplying abundant power are making it possible for the small towns to compete with the large cities of the nation. Give a small town adequate transportation and power—assuming that it has the necessary raw materials and available workers—and the two essential requirements of industry have been met. The decentralization of industry which is now under way would not have been possible without such facilities. The South, blessed with an abundance and variety of raw materials and a plentiful supply of labor, has grown and prospered wherever power and transportation have been supplied to its small cities and towns, until these towns now are rapidly developing into small cities and the small cities are growing into larger population centers.

### Business Must Keep Itself Free

**D**ISPATCHES from Washington indicate that the National Business Survey Conference set up at the suggestion of President Hoover, after the stock market collapse of last fall, is in doubt about its course after the close of this year. Suggestions that the Conference become a permanent body "do not seem to meet with favor at the White House," says a news article in the Journal of Commerce.

In its feeling that its field consists of surveying the country and reporting on actual conditions, leaving to business and industry themselves the responsibility of taking advantage of changes in the situation, some good might result from making the Conference a permanent institution. But such an organization can be of value only if kept free from the slightest trace of feeling of obligation to any official or branch or department of the Government. To function on any other basis would pave the way for politics to enter. American business itself should be the creator of any business conference, if a permanent conference be considered advisable.

### Truth—Not Sentiment

**W**ARNING by Senator Arthur Capper, of Kansas, that in the next session he will call up his bill to create a Federal Department of Education, with a Secretary in the President's Cabinet, is a reminder that this measure is not dead or even sleeping.

The fact that this bill is generally thought to promote education gives it tremendous popular appeal. In actual operation such a department would extend the present system of governmental bureaucratic dominance over every educational institution in the land.

The proposition as we view it, is socialistic to the verge of communism, un-American in principle and fraught with national dangers.

### One Corporation in Each Community for All Cotton Handling Operations Suggested

**O**UT of the intensive study of, and suggested plans for farm relief by business men it does not seem possible that the agricultural problem can remain altogether unsolved. However, each separate crop has its individual problems, making it difficult for any broad generalization for betterment to be applied with success. For the single crop of cotton there are many questions to be considered, between the growing of the staple and its sale to the cotton spinner. From that point, further difficulties are encountered, for the cotton manufacturer and distributor each have their problems to face before the finished product is delivered finally to the ultimate consumer.

The policy of the Federal Farm Board being so widely discussed, any plan for marketing crops should be given careful consideration before its possible final rejection. With that end in view we publish here a letter from P. M. Eichelberger, cotton merchant and warehouseman of Anniston, Ala., to Col. Harvie Jordan outlining a suggestion for organization of centralized cotton corporations, with the hope of interesting business men of national prominence in their development. In this letter to Col. Jordan Mr. Eichelberger said:

"Your article in the MANUFACTURERS RECORD, 'Baling and Handling American Cotton,' interests us very much because it is along lines we have been working on for a number of years.

"You advocate the manufacture and installation of high density gin compresses in 10,000 well-equipped ginneries. If this number of ginning plants should be able to gin all the cotton it would mean an average volume of only 1,500 bales. This idea would have been splendid when you first advocated gin compression years ago, but with motor trucks for transportation the South should have centralized ginneries that can handle an average of 7,500 bales each.

"A ginnery that handles 5,000 or more bales of cotton can mill the seed at a lower cost than the cost for transportation by rail to any oil mill and the feed products returned for local consumption. And it is generally conceded that the seed products should be returned to the land via livestock.

"A ginnery that handles sufficient volume of business should have a cotton warehouse in connection that will save transporting the bale. Therefore, the South needs to centralize its ginning, compressing, warehousing and oil milling problems into community plants. These community plants should operate production credit corporations that would assure them sufficient volume of cotton and in addition furnish the farmers a much needed service in production credit, inspection, management, etc."

It is Mr. Eichelberger's contention that if men of big business could be induced to become heads of Southwide corporations who would work with organized communities in the building and operation of plants as sketched in the foregoing, some of the cotton farmers' problems would be solved.

Mr. Eichelberger's plan, however, could not expect the support of the Federal Farm Board as we understand its operation under the law. The Federal Farm Board is charged with carrying into effect the policy of Congress as expressed in the Capper-Volstead agricultural marketing act. It cannot make loans to individuals or private corporations, and must work solely through farmer-owned co-operative associations run for the mutual benefit of their members who shall be agricultural producers. This, of

course, eliminates the possibility of assistance from the Farm Board in the establishment of a corporation. The Federal Farm Board, under the law, could loan money to a farmer-owned co-operative, centralized cotton-handling project for the construction or acquisition by purchase or lease of physical marketing facilities, or preparing, handling, storing, processing or merchandising agricultural commodities.

Of course, Mr. Eichelberger's suggestion is only briefly outlined, but nevertheless he has a plan which is worthy of further investigation by business leaders of the country.

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### Urges Commercial Research Laboratory for the South

**I**N the course of a letter to William Crooks, industrial engineer of the Louisiana & Arkansas Railway Co., Little Rock, commenting on his recent article in the MANUFACTURERS RECORD, Walter A. Richards, vice-president of the Tom Huston Peanut Co., Columbus, Ga., writes:

"I was intensely interested in reading your article in the MANUFACTURERS RECORD, urging establishment of a Forest Products Laboratory in the South.

"The Tom Huston Peanut Company and Tom Huston, Inc., are spending large sums of money each year on research work and we have established a laboratory of fair proportions.

"However, we are interested in seeing the establishment of a commercial research laboratory so operated that we could turn over specific problems to them for solution with the knowledge that the work would be satisfactorily done and complete results turned over to us for exploitation.

"With this in view, we have for some time been urging our consulting chemist, Dr. Chas. H. Herty, of New York City, to establish a laboratory in the South. Frankly, I believe Dr. Herty is interested in such a plan provided he has reasonable assurance of its commercial success."

Mr. Richards offers a constructive suggestion for the South, for in keeping up with the modern industrial trend, this section must utilize scientific research in perfecting existing methods and in developing new uses for its resources.

Some Southern colleges in recent years have made remarkable progress in broadening their scope of activity in research work. There is yet much to be done and a central agency for carrying out scientific investigations of Southern products would be of value to the whole country.

But let us not confuse the issue by advocating too many things at once. Establishment of a forest products laboratory in the South, inasmuch as this section produces more than half the lumber products of the United States and, according to high authorities, offers great opportunities to the woodworking industry and for development and utilization of forest by-products, would be an advantageous move toward securing greatest efficiency from research activity. By all means the South should put forth every effort to secure a forest products research laboratory; then perhaps there should be established a general commercial laboratory for testing all raw materials of the South.

### From the Ultimate Consumer's Viewpoint

**T**WO articles in the recent news of the day are of basic importance not only to the ultimate consumer but also to American industries and to the retail trade which is the last stretch in the channel of distribution through which goods pass from the producer to the individual purchaser.

While retail prices to the consumer have shrunk somewhat, the decrease has not been proportionate to the fall in wholesale prices, the Federal Reserve Board finds.

Rising cost of department store operation was deplored at a recent convention of the sales divisions of the National Retail Drygoods Association.

In short, the production end of manufacturing industry has improved its operation so greatly that lower wholesale prices have been made possible, but the retail distributing factor not only has continued its prices, but even complains of profitless sales volume.

The purchaser's view may not be without interest in the situation. From observation, the purchaser may feel that the keenness of competition impels many retail stores to practices which they might not otherwise consider. From experience, the purchaser may attribute much of the price situation to a widespread carelessness in many stores, verging on costly inefficiency.

To take the second phase first, as contributory to the first phase, an instance may be cited of a man ordering half a dozen shirts of size 16 and on opening the package, when delivered, finding two shirts of that size and the four others of different sizes, no two alike. This is neither an exaggeration nor an imaginary case, but an actual experience, and only one of a dozen similar instances which might be pictured. A woman buys a lamp and finds it bent or otherwise imperfect; stockings which she has purchased are delivered in wrong and mixed sizes, some of them with "runs" or other defects. These examples are typical and of common occurrence.

In virtually every such instance, the store is "sorry" and sends for the imperfect goods, thus necessitating two extra trips for the delivery wagon, to say nothing of the ill feeling engendered in the customer's mind.

Through the keenness of competition, the retail stores, for one thing, are obliged to follow the practice of delivering packages of small value, and also to send for even entirely perfect goods, which a purchaser may decide later that he or she does not want. Not always, under the liberal and even generous operation of the retail stores, are the stores to be blamed; but in large measure this very liberality based maybe on competition, is responsible for impositions by captious or vacillating customers.

For years, the manufacturing end of industry and the wholesale factor in distribution have been engaged in efforts to improve their respective methods, and cheaper prices have been made possible to the retailer. As the consumer is likely to see the situation, there

now is ample opportunity for the retailer to do likewise, with many evident instances in which such improvement is easily possible.

### Volume of American Imports Increases

**S**UPERFICIAL view of a decline in the value of American imports in the first quarter of this calendar year carries no comfort to American industries and workers when translated into terms of volume. While the imports decreased in aggregate value, they increased in volume for many items. Analysis of a recent report from Washington emphasizes the depth to which world prices have dropped, in themselves as well as in comparison with the price decrease in the United States.

While imports valued at \$893,000,000 for the quarter show a decline of 20 per cent in comparison with the same period a year ago, the quantities of many imports show large increases, estimated by the United States Chamber of Commerce, in some cases, to run as high as 327 per cent. In quantity, 31 out of 82 principal imports showed a gain.

Actual proof that the decline in import values was accompanied by increase in volume may be cited in the American imports of coffee. While imports of 488,765,000 pounds in the recent quarter were 9 per cent more than in the first quarter of 1929, the value in the recent quarter, \$63,040,000, was 28 per cent below the same period last year.

The decline in world prices started well before the revision of the American protective tariff was undertaken, and may not properly be attributed to the new law. The shrinkage in world prices is further proof that an adequate tariff law is needed to protect American industry and labor against floods of near-pauper foreign products.

### Federal Government a Tax Shirker

**T**HE right of a State to impose taxes on Federal Government business of a private nature, as on private enterprises with which the Government unfairly competes, is to be decided by the Supreme Court at the instance of the State of Alabama.

In an effort to tax the sale of power at Muscle Shoals by the Government to a private corporation, the State contends that the enterprise is not a "governmental function," and therefore the tax would not impinge on the sovereign rights of the Government.

Through ever-increasing intrusion by the Government into private-business fields, any enterprise in which it may choose to engage in any way whatever seems to be regarded as a governmental function, in these days. But if Alabama can compel the Government as an operator of private business to pay taxes, as legitimate private business does, scores of states, counties, cities and other communities will be enriched, and private business will be relieved of a trifle of the handicap which it carries under Government competition.

### Educational Advertising

**T**HE business-building value of educational advertising was paid a striking tribute recently by A. M. Kelly, president of the National Confectioners Association, in the course of his annual address at the convention of the Association. Mr. Kelly said:

"Four years ago the candy industry faced a condition that threatened its very existence. Owing to the growing volume of so-called dietetic reforms, candy was under a hot fire of adverse criticism. People were being told they ate too much candy; that candy was not good for them; that it made them fat; that it gave them diabetes and other dread diseases. Candy was regarded chiefly as a luxury and millions of people looked upon candy eating as a guilty pleasure.

"Our answer to this threat was the establishment of the national advertising and educational campaign. And I don't believe there is a man in this meeting who will challenge my assertion that today, at the end of four years of our educational work, our product occupies an entirely new place in the public mind. The healthfulness of candy has been definitely established. Candy is looked upon not as a luxury or a special treat, but as an article of everyday diet."

Educational advertising of the sort referred to requires patient and persistent effort. Plans therefore must be laid with care and followed with skill and intelligence. A definite lack of specific information on the part of the public must first be established, and the proper information then imparted. In the case under discussion it was the public attitude toward all candy that was to be altered.

While the effects of such advertising may be slow in materializing and difficult to identify, they are likely to be basic and enduring, a solid foundation on which to build a desire for specific articles. All the makers and dealers of a very large group are beneficiaries.

### Becoming More Entangled in Europe

**T**HE real significance of the intimate position of the United States in the fiscal and financial affairs of foreign lands is emphasized in the subscriptions to the \$350,000,000 capital of the Bank for International Settlements, for which America provides \$98,250,000, or approximately 28 per cent. Eight other countries subscribe the remaining 72 per cent.

In comparison with \$15,000,000,000 already invested in Europe by the people of the United States, this latest subscription of more than \$98,000,000 is almost negligible. The importance and significance of the American participation are conspicuous by the fact that through it the United States Government becomes directly, although "unofficially," entangled in the complications of trans-Atlantic nations.

The policies of the American interests in this bank unquestionably will be guided by the Federal Reserve Board, and often, no doubt, by the State Department, and although the participation of these Government agencies may not be "official," their national and international responsibilities and activities will be real. The citizens of the United States should give serious consideration to the direction in which we are heading, a way that leads to entanglements in European affairs.

# The South Lights the Way

## *in the ILLUMINATION OF INDUSTRY*

By

E. E. POTTER

General Sales Manager,

Edison Lamp Works of General Electric  
Company, Nela Park, Cleveland, Ohio.

**I**N THIS COUNTRY, LONG FAMOUS as a whole for its industrial growth, the South has made in the past few years even more rapid strides than several other sections of the United States. This preeminence of the Southern States has of course dated from the time when the tobacco and textile industries, particularly cotton manufacture, began to gather about the source of supply south of the Mason and Dixon line. But of late the growth of other industries has made the South prominent also in the production of lumber, fertilizer, steel, cement, paper, and ceramics. From 1914 to 1925, statistics reveal, the United States showed an increase of 159 per cent in manufactured products, while in the same period the South showed a gain of 203 per cent, a growth appreciably faster than that of the country as a whole.

Among factors contributing to this advance, the supply of raw materials has been mentioned. But of course there are others, such as an abundance of inexpensive labor, low building costs, favorable climate, and the progressive legislation and public support which have consistently invited and welcomed the migration of industries southward. And especially has the development of immense power resources served as an inducement for increased manufacturing.

### *Development of Power Resources*

**I**N 1928, 61 PER CENT of the gain in the developed water power of the United States was in the South, so that the South now has nearly one-fourth of the hydro-electric generating capacity of the United States. And since 1907 the South has trebled its developed water power, as the following figures of kilowatt hours generated by central electric stations will indicate.

KILOWATT HOURS GENERATED BY CENTRAL STATIONS					
	(In 000,000's)				
	1907	1912	1917	1922	1927
South					
Atlantic	266	730	1,745	3,789	8,445
East South Central	119	228	1,049	1,420	2,777
West South Central	139	234	483	1,041	3,275
Total South	524	1,192	3,277	6,240	14,497

In making a bid for industries, the South has overlooked no bets. And naturally the cheaper rates resulting from this huge increase in available power has been one of the prime drawing points.

Since lighting has proved one of the most important aids to production, the

tion is for more light, the question arises, "How has this sudden increase of light come into being?" The answer is furnished in the fact that during the war, when production had to be rushed at topnotch speed, high intensities of illumination were used to help the workers turn out vast quantities of material. The actual increase in efficiency at that time prompted this new line of investigation which has proved so fruitful.

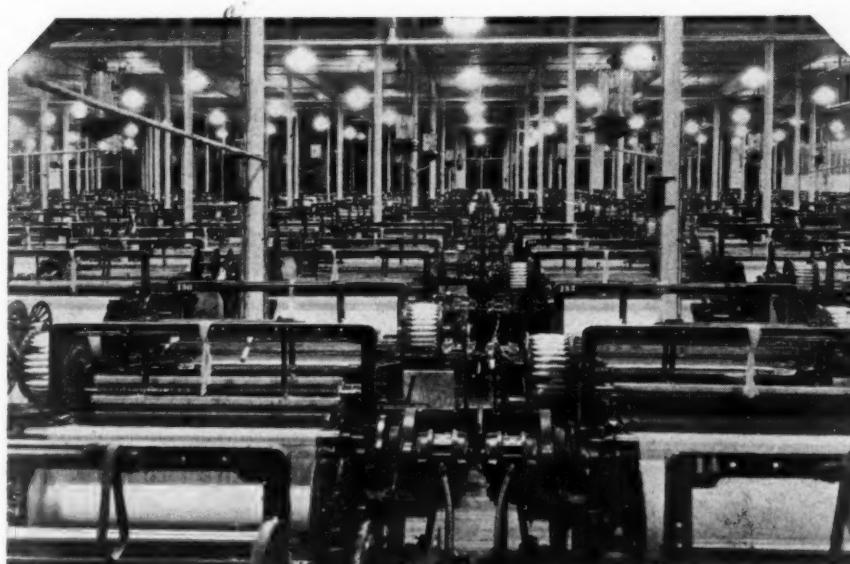
At present it is an accepted fact that well-lighted offices are necessary for clerks and stenographers to turn out good work, and that brightly illuminated stores attract crowds. In comparison, industrial lighting is only beginning; but the advances already made have been rapid.

### *Need For Light*

**A FEW CONSIDERATIONS** will make clear this need for adequate lighting. It is not generally recognized what a great advantage the man who works outdoors enjoys over those who work indoors, but the following table presents strikingly the great differences in illumination between various locations.

	Location	Intensity in foot-candles
Outside in	Sunlight	10,000
	Shade	1,000
Inside	Near window	100
	Artificial lighting (modern)	10
	Artificial lighting (old)	1

Even on cloudy days the farmer, the



Mazda Lamps in Glassteel Diffusers Give an Intensity of 8 Foot-candles in  
This Weave Shed of the Chicopee, Ga., Mills

General Electric textile motors are shown. The ceiling, pillars and pipes are light colored to increase the effectiveness of the illumination.

mason, the painter, have the advantage of several hundred more foot-candles, yet they never complain of too much light. And for daytime workers indoors, artificial illumination is absolutely necessary on the average of two hours a day throughout the year, on account of extreme cloudiness or the approach of evening. It is an established fact that when the days are short and natural light fails early, accidents show a marked increase in poorly lighted plants.

The best industrial lighting today is hard to standardize, it varies with the industry and the department. Yet certain broad norms can be recognized, many of them the result of tests conducted in the textile industries of the South. The findings of these investigations appear below, in the table of intensities now standard in two leading Southern industries:

Character of Work	Foot-Candles Good Minimum
Textile—cotton	
Opening and lapping, carding; drawing frame, roving, dyeing	8 5
Spooling, spinning, drawing in, warping, weaving, quilling, inspecting, knitting, slashing (over-beam end)	12 8
Textile—silk	
Winding, throwing, dyeing	12 8
Quilling, warping, weaving, finishing	
Light goods	15 10
Dark goods	20 15
Textile—woolen	
Carding, picking, washing, combing	6 4
Twisting and dyeing	10 6
Drawing-in, warping	
Light goods	10 6
Dark goods	15 10
Weaving	
Light goods	12 8
Dark goods	20 12
Knitting machine	15 10
Tobacco	
Drying, stripping, general	3 2
Grading, sorting	25 15

But at this point it seems advisable to justify the use of more light, and to show the effects which these industries

have found to be directly attributable to light.

#### *Light the Profit Builder*

MANY TESTS HAVE REVEALED light as a direct production aid. First of all, it promotes accuracy of vision. Obviously a worker can see better in good light than in poor. And since electric light does not vary as does daylight, it is often used exclusively, especially in such occupations as watchmaking, the cutting of shoe uppers, and surgery.

It has also been found that where electric light is used as daylight wanes, the workers' movements are slowed down if the intensity of the artificial system is low in comparison. Workmen become more cautious in their movements and spend more time in looking for tools dropped. This, again, is the result of less accurate vision under poorer lighting conditions.

The second contribution of good light is in maintaining, or even increasing, the speed of operation. It is almost axiomatic that, in the case of fast-moving objects, a high intensity of light is required to maintain speed of operation. This is readily evident to anyone who has played tennis, and noticed the decline in speed with the decreasing ability to see detail as evening approaches. Stated in another way, objects apparently move slower in bright light. Therefore it is evident that a high level of lighting intensity is necessary to maintain the daytime rate of production.

Naturally, an automatic machine gains no more speed by the use of more light. But no matter how efficient a machine, production depends on both machine and operator. And if we increase efficiency of the operator, the

efficiency of the combination is increased.

In tests made with strictly manual labor it has been shown that increase of speed is about 10 per cent of the increase in light, of course only up to the point of diminishing returns. Where a combination of manual and machine labor is involved, the following table will give some idea of the results found:

Kind of Work	Intensity in Foot-Candles		Per Cent Increase in Production
	Old	New	
Stamping and pressing	.7	13	12.2
Semi-automatic buffing	3.8	11.4	8.5
Iron pulley finishing	.2	4.8	35.0
Soft metal bearings	4.6	12.7	15.0
Heavy steel machinery	3.0	11.7	10.0
Carburetor assembling	2.1	11.7	12.0
Spinning	1.9	9.0	17.0
Roller bearings	5.0	20.0	12.5

Other specific instances will give even a better idea of light as a production aid. In a hosiery mill, bare 100-watt lamps were replaced by 200-watt white bowl lamps in R.L.M. domes. Glare and sharp shadows were eliminated; fewer machines broke down; repairs were made more rapidly; labor turnover dropped from 43 per cent to almost zero; the morale of the whole force was improved. Production showed an increase of 10.8 per cent on the knitting machines and 6.1 per cent on the looping machines, all this at an operating cost of 1.1 per cent of the yearly payroll.

During a three-months' test in still another hosiery establishment, an increase in illumination from 7.2 foot candles to between 16 and 21 foot-candles (the varying intensities depending on the particular operation) showed a 14 per cent increase in production for the day shift and 16 per cent for the night shift.

In a certain post office an increase from 3.8 to 8 foot-candles increased the speed of letter separators 4.4 per cent. It was estimated that if better lighting could be extended to the other departments, a saving of \$109,000 per year could be effected in that post office alone.

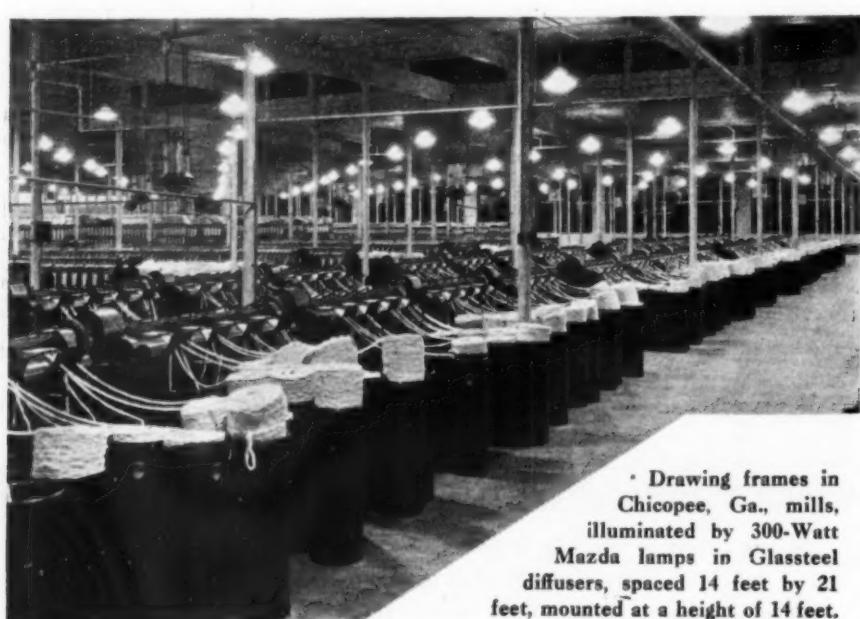
The Timken Roller Bearing Co. furnishes the following statistics:

Foot-Candles	Per Cent Increase in Production	Cost in Percentage of Payroll
5 old	4.0	.3
6 new	8.0	.8
13 new	12.5	1.6
20 new	12.5	2.4

In the face of such figures and tests there can be no doubt that light is a production aid, largely from the increased accuracy and speed of the workers.

#### *Indirect Benefits of Proper Lighting*

BUT LIGHT CONTRIBUTES indirectly to the increased effectiveness of a working force. The health of the employes, which is also an important factor of their usefulness is affected vitally by the light under which they work. Poor light or light from the



wrong direction results in eye-strain, headaches, and mental fogginess; while good light brings eye comfort, alertness and good spirits. Proper illumination, moreover, promotes general cleanliness by allowing no dirt to collect unrevealed. Already ten states by enacting minimum lighting requirements have recognized the importance of light to health.

Good lighting eliminates many of the losses from spoilage and from the exceedingly small redemption value of "seconds." Good lighting has proved its ability to reduce the expensive cost of labor turnover, by its influence on many items in which employees are interested and by its promotion of pleasant working conditions.

In promoting safety, likewise, good lighting saves the employer useless expense. Moving parts are made easily visible; and with shielded lights workers are no longer so blinded by glare that they inadvertently run into gears, belts, etc. Insurance company records, which show that the greatest number of accidents occur on the days of least natural light, suggest that 25 per cent of industrial accidents are avoidable if adequate illumination is provided. And even juries frequently hold the lack of illumination to be contributory negligence.

Statistics reveal that of the 91,000 accidents in one year, 23.8 per cent were due to the lack of proper illumination, 10 per cent directly and 13.8 per cent semi-directly. From this it can be seen that the increase in safety alone would pay for the installation and operation of an adequate lighting system.

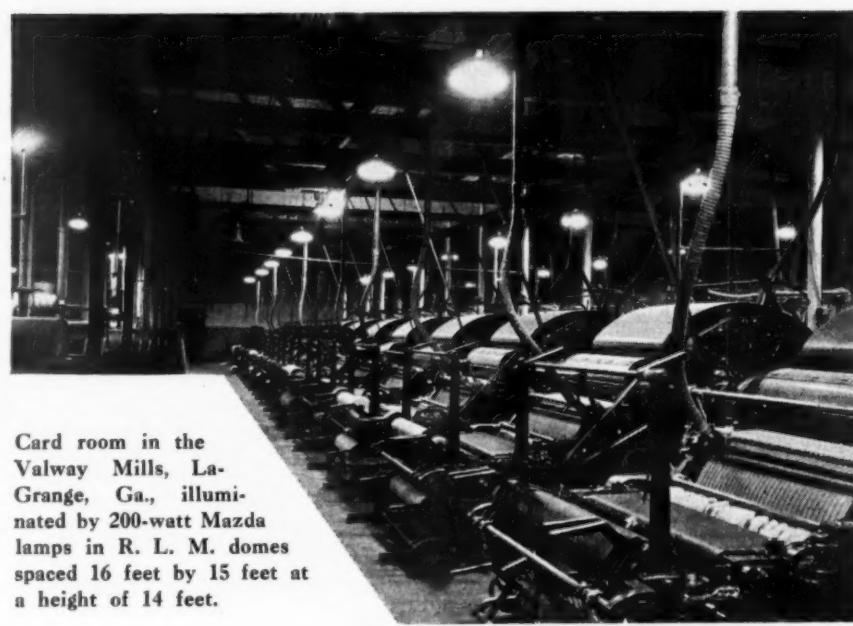
#### *Cost and Return*

IT IS NOT ALWAYS easily apparent that the cost of installation and operation of an adequate lighting system brings a sufficient return to justify it. Budgets are sorely needed for other things and the decision to scrap a present lighting system depends on how much is saved by better illumination.

A series of tests will show whether such an alteration is profitable:

Test No.	Per Cent Increase in Production	Cost in Percentage of Payroll
1	12.2	2.5
2	8.5	1.86
3	35.0	5.5
4	10.0	1.2
5	12.0	.9
6	12.5	2.4
Average ....	90.2	14.36
	16	2.4

These figures disclose an increase of nearly 15 per cent in production to every 2 per cent in payroll. In other words, if 100 men were employed and two new men increased the production 15 per cent, they would be very valuable. But light takes their place and brings this increase without additional space, machine or other overhead.



Card room in the Valway Mills, LaGrange, Ga., illuminated by 200-watt Mazda lamps in R. L. M. domes spaced 16 feet by 15 feet at a height of 14 feet.

An important automobile body manufacturer made a study of the costs and saving from better lighting in various departments of his plant. The results speak for themselves. He used a 33 per cent larger lamp and 60 per cent more fixtures; his lighting cost went up 108 per cent and the illumination level rose 133 per cent. Yet all this cost only \$0.76 per day per employee additional expense. In one department he found that the increase in foot-candle level reduced the average monthly labor turnover from 6.37 to 2.78 per cent and every reduction of 1 per cent in turnover saves him \$96 a year. After three months, in another department piece work rates were reduced 8 per cent, but employees received the same amount as before, on account of their increased productivity. And here each 1 per cent reduction saves him \$842.40 a year.

Since the entire lighting operation cost is only \$428 per year, if only 1 per cent is credited, the net saving is \$414—enough to pay for the installation in 18 months.

In the assembly shops, where a uniform vertical illumination of body surfaces was installed, the net daily cost was \$2.35, enough to pay for the installation every 9½ working days. In two departments alone, the net saving per year was \$30,000 from lighting changes that have speeded up work on assembly, eliminated repair work following painting, lessened labor turnover and lowered piece-work rates.

It is plain, therefore, that the gain from proper lighting far exceeds its added cost. The installation itself, considered as plant investment, can be written off in six years. The operation normally costs only about .35 per cent of the first cost per month. Today, cheaper and more efficient lamps, im-

proved reflectors, a better knowledge of lighting principles and cheaper current make the operation of a satisfactory lighting system only half of its cost 15 years ago. In other words, a modern lighting system can be operated today for exactly the same cost as an antique and less remunerative system of 15 years ago.

#### *Lighting Surveys*

PERHAPS ONE REASON why the South has so forged ahead in scientific industrial lighting is the free use Southern manufacturers have made of the services of lighting engineers. Every central power station and Mazda lamp manufacturer retains engineers who are trained to analyze the lighting requirements of any industry and to prepare plans and specifications for a modern and efficient lighting installation.

With a foot-candle meter—a photometer to enable the instant reading of the illumination on any machine or bench—the engineer will carefully measure the horizontal and vertical intensity, the direct and reflected glare and the shadows. He will diagnose the complete lighting requirements and provide all data which are necessary to an understanding of the improvements needed.

The engineer is equipped to supervise any demonstration that may be required. In the area where the most exacting work is being done it may be desired to install, temporarily or permanently, six or ten recommended lighting units, so that the plant manager may observe, by any tests his particular problems suggest, the benefits of the improved illumination.

But whatever the engineer is called upon to do, you may be sure that he studies each problem without bias, since he has no reason to show preference to

any one type of lighting or any particular style of reflector. Without charge, he will determine the changes needed, foretell the benefits to be expected, determine the cost by conference with an electrical contractor, and give to the manager facts as to the plan, cost, benefits and savings in dollars and cents—which facts will have their own eloquence with any board of directors.

Already we have alluded to many of the problems which will have to be solved in detail by the engineer—methods of lighting, layout, intensity, proper lamps and reflectors, and the background, contrast relief and room efficiency. But one other thing is of such particular importance as to merit a brief consideration; that is wiring.

#### *Wiring*

SINCE THE WIRING PLAN is the foundation of proper illumination it should be so devised as to take care of all future needs. Inadequate wiring causes not only a waste of electrical energy in overloaded circuits, but also low efficiency of lamps and generally unsatisfactory lighting conditions. In this connection it is advisable to separate the power circuit from the lighting circuit, to avoid annoying fluctuations in the light.

The cost of re-lighting is largely a wiring cost, hence it is most economical in wiring to provide for future needs. If outlets are properly installed in regard to spacing and size of wire, any changes in lamps or reflectors can be made without undue alteration.

#### *The Results of Lighting Progress*

This then summarizes what progressive Southern industry has discovered and is trying to tell the industrial world:

1. The light to see by is not necessarily the light to work by.

2. Nearly all industrial plants need artificial light during the daytime.

3. 142 days a year are cloudy.

4. In a plant well lighted by daylight alone the level of illumination on a cloudy day drops from 40 or 50 foot-candles to 3 or 4.

5. Good illumination allows workmen to check measurements at their machines, without the necessity of going to the distant window for light.

6. It allows the manager to lay out his factory for a straight-line flow.

7. Low lighting levels are responsible for increased spoilage, decreased production, and an increase in the number of accidents.

8. A good lighting system with regular maintenance is an investment rather than an expense. It will pay for itself in a relatively short time.

#### Work Begins on New Southwest ern Natural Gas Pipelines

Tulsa, Okla.—With four crews working, one at the Quinten end, one at the Tulsa end and two at river crossings, the laying of the new high-pressure pipeline of Southwestern Natural Gas Company, subsidiary of Appalachian Gas Corp., was recently commenced, according to an announcement by Harry Mann, vice president. The new pipeline is a "Y" line, one leg passing through Sapulpa and having its terminus in Tulsa, and the other leg running to Boynton and Muskogee, with a branch line to Sand Springs. Contracts call for completion of the Muskogee branch by Sept. 1, and the entire line a month later.

On completion of the line, Southwestern Natural Gas will sell natural gas under long term contracts to companies engaged in its distribution for domestic and industrial purposes in Muskogee, Sapulpa and Boynton, and will also furnish natural gas directly to industrial consumers in Tulsa.

#### \$1,000,000 Oklahoma Hotel

##### Completed

The new 14-story Youngblood Hotel erected at Enid, Okla., at a cost of approximately \$1,000,000, was recently completed and opened for reception of guests. The building is owned and will be operated by the Youngblood Hotel Corporation, of which L. S. Youngblood is president; S. S. Orwig, vice-president, and W. C. Bunyard, secretary and treasurer, all of Wewoka, Okla. It is of re-

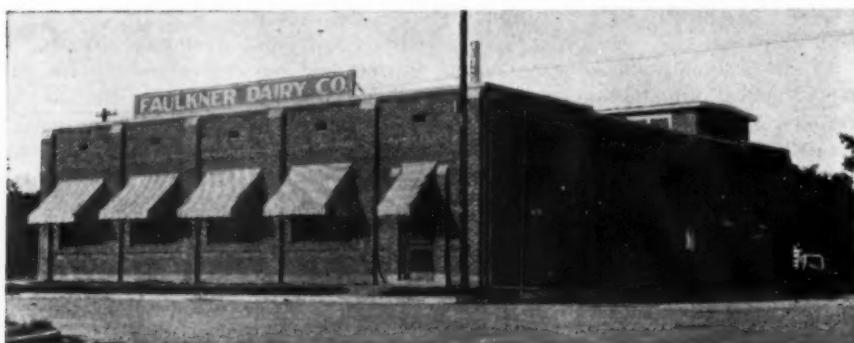


Youngblood Hotel, Enid, Okla.

inforced concrete, brick and stone construction and contains 300 rooms. The lobby is approximately 50 by 50 feet, finished in travertine, while an outstanding feature is a chandelier which hangs far down from the center of the ceiling and harmonizes with the general color scheme. A mezzanine floor extends about 100 feet along the south side of the hotel and is about 30 feet wide. There is a crystal room, 30 by 40 feet, coffee shop, ball room, convention or banquet room to seat 150, and four types of guest rooms, all with baths. Guy C. Reid, Oklahoma City, was the architect and Alonzo H. Gentry, Kansas City, Mo., associate architect. D. C. Bass & Sons, Enid, were general contractors.

#### Nashville Votes \$650,000 Bonds

Nashville, Tenn.—Voters of Nashville have approved a bond issue of \$500,000 for improving the city hospital and \$150,000 to erect a junior high school in North Nashville. Issues of \$1,000,000 for a municipal airport, \$150,000 toward a memorial plaza and \$150,000 to improve the municipal electric light plant were defeated. The city has been called upon to contribute \$150,000 toward the Presidents' plaza, for which the state authorized \$150,000 and the federal government \$400,000.



Dairy Industry Growing in An Arkansas County

Growing from a small unit, which during the first operating year paid \$28,000 to its 38 patrons, the Faulkner Dairy Co., Conway, Ark., in 1929 paid \$140,567 to over 400 patrons and in addition built new plant facilities costing \$43,000. This increase of business necessitated reorganization in 1929 from the cooperative plan inaugurated at the company's inception in 1921. As a result of the activities of the Faulkner dairy, many of the dairy barns of its patrons have been remodeled and improved, and many pure bred Jersey cattle have been added to the herds in Faulkner County.

## "Farm Relief Bill Violates Economic Laws"

[The first "birthday" anniversary of the Federal Farm Board this month was recognized by the MANUFACTURERS RECORD in its last week's issue through an article on the Board's work for the South. Some weeks ago we suggested that more time be allowed the Board before condemning its policies and practices. This initial work is largely experimental. Not everyone, for instance, will approve such a policy as the endeavor to peg commodity prices by purchases at various exchanges, even though the Board ultimately may escape without loss. Opinions differ widely as to the principle involved and as to the soundness of the policies the Board has put into practice. An adverse view is presented here by Guy M. Walker, on the ground that the principle upon which the whole farm relief legislation was based is uneconomic and, therefore, is doomed to failure.—Editor MANUFACTURERS RECORD.]

By GUY M. WALKER, Laurel, Miss., and New York City.

I GREW up on a farm and have known the problems of a farmer ever since I can remember, but while in college my interests in studies led me so largely to the natural sciences that years afterwards when some one asked me where I learned my economics I replied that it was in the chemical laboratory. This will show you that on the farm problem I am very much of a realist. No amount of theorizing will do the farmer any good, and primarily there is nobody who can help the farmer except the farmer himself. As one who has devoted practically all of his adult life to mending the mistakes of others and to reorganization of all sorts of businesses that all sorts of business men and bankers have undertaken and fallen down on, I want to say that the so-called Farm Relief Bill and the appointment of the so-called Farm Board was ill-advised, useless and must inevitably fail. There is no use in attempting to fight nature or to escape the relentless operation of economic laws. All under the sun that men can do is to try to discover the laws of natural economics and get in line with them. Men and businesses succeed in accord with their ability to discover the natural economics of the situation and comply with those economic requirements, and they inevitably fail when they try to do anything else, particularly when they have tried to escape the results of violating economic laws.

The whole trend of modern science is to discover surer, quicker, easier, cheaper ways of doing everything, making everything, and raising everything. Every laboratory and individual devoting time to research is finding ways of making things better and cheaper. It is this which has produced the steady decline in commodities in the last few years. It is this which is making the farmer raise more wheat, and more cotton, than they ever did before, and it is this that makes it utterly useless to expect that there will ever be anything more than a temporary rise in commodity prices.

The fatal defect in the Farm Bill is

that it denies the possibility of men learning how to do things better by research; that it attempts to defy the operation of such economic laws as we have been able to discover; but really its most vital weakness is the fact that it has psychologically ruined the farmer by trying to make the farmer believe that somebody can and is going to help him. It has largely induced an attitude of mind where the average farmer has quit trying to help himself. Thirty years of experience in the reorganization business from one end of the United States to the other has convinced me that when you find that somebody has undertaken to do something that is economically wrong there is absolutely no use in waiting, as you suggest, and giving the Farm Board a chance. The thing to do is to recognize the uneconomic character of the whole Farm Relief proposition, repeal the law, abolish the Board and do the only thing you can do to help the farmer: protect the farmers' home markets by a protective tariff and then through research in all the phases of farm production help the farmer to raise more, bigger and better crops with the same amount of work he is now expending on poor stuff, small crops, and particularly to teach the farmer properly to use his time and to avoid the enormous waste which now characterizes every phase of farm production.

Since writing the foregoing, I have read with interest the article in the MANUFACTURERS RECORD of July 3, "What the Federal Farm Board Has Done in Its First Year for Southern Agriculture," which singularly proves the correctness of my attitude in opposing the uneconomic character of the law and the futility of action of the Farm Board under it. What has the Farm Board done for cotton? By arbitrarily fixing a value of 16 cents and lending up to 16 cents a pound on a million bales, the action of the Board in effect induced thousands of cotton growers to plant more cotton than they otherwise would have planted in the

belief that the Farm Board could and would hold the price up to 16 cents.

What has been the result? As this is written cotton is down to 13 cents, a loss of three cents a pound on a million bales to the Farm Board itself, and several hundred thousand farmers are forced to face a market for the growing crop about three or four cents less than they thought was certain when the crop was planted. What can be said beyond a mere statement of facts, facts that demonstrate the uneconomic character of the farm relief legislation and the futility of the program of the Farm Relief Board? When you find an uneconomic program, the thing to do is to stop it as quickly as you can.

### BIG FLORIDA TIMBER DEVELOPMENT

Philadelphian Purchases 14,000 Acres of Forest Land in Clay County

Jacksonville, Fla.—Through the agency of the James D. Lacey Company of this city, A. W. Budd of Philadelphia, Pa., has purchased from the Jennings Artesian Farm Land Company approximately 14,000 acres of forest land in Clay County, about 25 miles from Jacksonville. The property comprises a practically solid area of fast growing longleaf and slash pine timber, a large percentage of which has reached the turpentine stage. The Lacey organization will be retained to supervise operations, which will include conservative turpentining activities; pole, piling and crosstie operations; utilization of mature timber, improvement cuttings, fire protection and thinning of young stands to hasten growth. A hog-proof fence will be constructed around the property, fire line plowed and planted to forage grasses and the area stocked with cattle. Mr. Hall of the Lacey company, who negotiated the deal, reports a decided increase in the demand for land in the Southeastern section since the first of the year.

# Whiteware Manufacture in *West Virginia*

*By*

W. A. KOEHLER,  
Professor of Chemical and Ceramic Engineering,  
West Virginia University,  
Morgantown, W. Va.

"WHITEWARE" is a term identifying a large group of ceramic products, the whiteness of which is due to the natural color of the raw materials. These raw materials in America consist essentially of clay, feldspar, and flint. West Virginia, which from the viewpoint of value of manufactured whiteware products ranks third among the states of the country, produces china and porcelain as exemplified by vitrified hotel china, electrical porcelain, high tension insulators and sanitary ware; and earthenware as exemplified by table ware, wall tile, and sanitary ware other than that coming under the china and porcelain classification. Twenty-four potteries, 19 of which are located in cities on the Ohio River, produce these ceramic products in West Virginia, where the industry ranks as the eighth of the state. Cheap natural gas and cheap high grade coal in this state make it attractive for all types of ceramic industries. Geographic location, combined with railroad transportation facilities, also is an asset.

China clay is an important ingredient in all whiteware, about 340,000 tons of this kind of clay being annually imported into the United States from England, and about 500,000 tons annually being produced domestically in Georgia, North Carolina, Florida and New Jersey. It must be remembered that all china clay does not go into manufacture of pottery, as more of this clay is used as a filler and coating for paper than is consumed

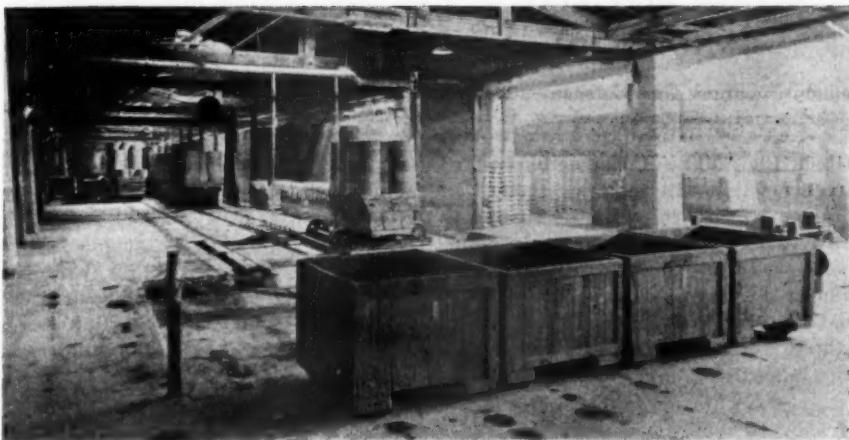
in ceramics manufacture. Modern mining and washing methods have so improved quality and uniformity of domestic china clays that manufacturers are

using American clays in increasing amounts. Of the 24 potteries in West Virginia, 21 use English clays, and 13 of these use in addition the American china clays.

Being of very poor plasticity, the china clay is supplemented in the process of manufacture by addition of ball clay, a more plastic material. As ball clay does not burn to the whiteness of china clay, no more of it is added than is required for satisfactory working properties. These ball clays are obtained from England and from western Kentucky and Tennessee. To reduce the high firing temperature required and to increase the strength of the fired ware, a flux supplying a glassy bond in the finished product is added during process of manufacture. For this purpose the United States manufacturers almost exclusively use feldspar. Feldspars are obtained from Maine, South Dakota, Canada, Tennessee and North Carolina. The feldspar-grinding center of the country is now in and adjacent to North Carolina, which, with Tennessee, produced more than 46 per cent of the domestic total in 1928. Flint is another important ingredient, giving the body of the product a rigidity while being fired. Like the feldspar, the flint, which must contain not less than 99.5 per cent  $\text{SiO}_2$ , is ground to a very fine powder and must be perfectly white. Flint is obtained from Berkeley Springs, W. Va., and from the states of Tennessee, Pennsylvania, Illinois, and Ohio.



Some Products of West Virginia Ceramic Industries



Tunnel Kiln and Cars Filled With Saggers

In the manufacture of plates, saucers and similar tableware, a plaster mold is utilized to form the inside of the ware. This mold is covered with a layer of plastic clay and is rotated at the top of a vertical spindle, a special tool removing excess clay and thereby forming the outside, or bottom side, of the ware. Cups are made similarly, except that the mold forms the outside and the tool removes the excess inside. The process is called "jigging." More irregularly shaped articles, like pitchers, are casted. In the casting method the clay, instead of being in plastic state, is mixed with water to a creamy consistency, which is poured into plaster molds. When the stiff layer next to the porous plaster mold, which absorbs moisture from the clay, reaches a sufficient thickness, the excess slip is poured out, leaving a pitcher with walls of proper proportions. After the pitcher is partly dry, the mold is removed. In some types of ware, the slip is allowed to remain in the mold to form a solid piece, cup handles, parts of sanitary ware, and high tension electrical insulators being made in this way.

High tension electrical insulators, though not representing a large volume of the whiteware industry in the state, are interesting in that they represent the highest type of whiteware produced from the mechanical point of view. High tension electrical insulators are made in West Virginia by two companies, one making these insulators exclusively and the other making them together with standard electrical porcelain. In manufacture of the high tension insulators, vitrification is carried to its limit so that no pore spaces whatever are left in the ware. Samples of the insulators are subjected to rigid tests before the lot they represent is approved for shipment. The samples tested must show a puncture voltage of not less than 235,000 volts, a dry flash-over of 110,000 volts and a wet flash-

over of 55,000 volts. In addition, the samples must show an ultimate tensile strength of 11,000 pounds and must withstand 10 to 30 one-minute cycles of changes from boiling water to ice-cold water.

The finished ware must be dried before it is ready for firing in the kiln, and although small pieces present no special drying problems, large pieces of sanitary ware must be dried very carefully to prevent warping and cracking. Of increasing importance in the firing of whiteware are the car-tunnel kilns, varying in length from 150 to 380 feet. The firing zone is about midway of this length. A car of unfired ware is periodically, say every hour, placed into one end of the tunnel, while another with fired ware is removed from the other end. During the hour the whole line of cars is slowly pushed forward. This procedure permits the unfired ware gradually to become heated and the fired ware to cool slowly. Car-tunnel kilns are economical in fuel and produce

excellently fired ware when properly designed and operated. There are 28 such kilns, and 226 kilns of the "bottle" type in West Virginia. Natural gas is the preferred fuel for kilns but, due to the slowly waning local supply, fuel oil is coming into prominence. One pottery uses producer gas and several use coal.

Whiteware manufacturers are turning more each year to employing technical assistance and scientific instruments. There is still a great amount of information to be acquired before scientific instruments can be employed to their fullest advantage, so that years of practical experience in the whiteware industry are of more importance than they are in many other chemical engineering industries. However, indicative of the trend toward more widespread use of science in the industry are the tests now applied. The body raw materials are given a firing test in nearly all potteries. The clay sample in the form of "pats" is placed in the kiln along with the regular ware, in order that its fired color may be observed. The flint may be put in shallow dishes and placed in the kiln. The feldspar is usually made into the form of small blunt cones, and not only tested for fired color, but also for "softness," this quality being observed by the slumping of the cone as it is exposed to kiln temperatures.

Among the companies engaged in the whiteware industry of West Virginia are the following:

Producing semi-vitreous table ware—  
Homer Laughlin China Co., Newell; Edwin M. Knowles China, Co., Newell and Chester; Taylor, Smith & Taylor Co., Chester; Cronin China Co., New Cumberland; Paden City Pottery Co., Paden City, and H. R. Wyllie China Co., Huntington.

Producing vitrified china—  
Warwick China Co., Wheeling; D. E. McNicol Pottery Co. of West Virginia,



View of Testing Department in a High Tension Electrical Porcelain Plant

Clarksburg; and Carr China Co., Grafton.

Floor, wall and mantel tile, and vitrified electrical wall fixtures—

Kenilworth Tile Co., Newell; Davidson Porcelain Co., Chester, and Wheeling Tile Co., Wheeling.

Refractory porcelain—

Metsch Refractories Co., Newell.

Porcelain insulators—

Porcelain Products Co., Inc., Parkersburg; Ravenswood Porcelain Co., Ravenswood; New Haven Porcelain Co., New Haven, and Specialty Porcelain Co., Newell.

High tension insulators—

Jeffrey Dewitt Insulator Co., Kenova.

Plumbers' earthenware—

Bowers Pottery Co., Mannington, and Wheeling Sanitary Manufacturing Co., Wheeling.

Vitreous sanitary ware—

Potomac Pottery Co., Keyser, and Eljer Co., Cameron.

Art pottery—

American Bisque Co., Williamstown.

### Preliminary Work Begun on Huge Power Project

Pine Bluff, Ark.—The White River Power Corp., which recently filed an application with the Federal Power Commission for authority to build three dams in Arkansas for a \$43,370,000 power development, has inaugurated a detailed survey for the construction of the proposed North Fork dam at a cost of \$13,000,000. This is one of the three dams contemplated, plans calling for a gravity concrete and steel structure, 175 feet high, 2200 feet long, to create a lake to cover 6000 acres. The Phoenix Utility Co., New York, is handling engineering details and expects to begin actual construction as soon as the Federal Power Commission issues a final permit.

Two foundation shafts are being drilled at White Cat shoals for the White River dam to be known as the Flippin project. This development will be carried out in four stages, the dam approximating one-half mile in length and being 225 feet high. Initial construction, however, would involve a dam 125 feet high and an installed capacity of 66,000 horsepower, while succeeding construction stages would bring the dam to its full height with an installed capacity of 265,000 horsepower. The Buffalo River development, estimated to cost \$6,260,000, would provide an additional 135,000 horsepower. Plans call for a dam near Rush in Marion County, differing from the others in that the water will be diverted through a 2000-foot tunnel to be cut through Indian Bend narrows, and the power plant constructed at the end of the tunnel. Practically all preliminary work on this project has been completed.

### 50-MILE PIPE LINE ANNOUNCED

#### Memphis Natural Gas Company to Link Mississippi Towns

Greenville, Miss.—Construction of a 50-mile pipeline will soon be started by the Memphis Natural Gas Co., Memphis, Tenn., to interlink the company's main pipeline with the towns of Leland, Indianola, Morehead, Ittabena and Greenwood, all in Mississippi. There is a possibility that an additional 50-mile extension will be built later to hook up

the towns of Carrollton, Winona, Grenada and Charleston, Miss. Surveys are being made for the first 50 miles and right-of-way will soon be acquired. In co-operation with the Mississippi Power and Light Co., Jackson, the Memphis company recently completed preliminary plans and specifications for the project and made a market survey of the new territory to be supplied with natural gas. The new line will tap the company's main 18-inch high pressure line near Greenville, present pressures being ample to take care of additional requirements.

### Tractors Displace Mules

#### On a Cotton Plantation in Louisiana

The Olivedell Planting Co. used 14 tractors this spring on its cotton plantation near Lake Providence, La., and plans to have at least 30 in operation next year. The company considers its plantation a cotton factory, the aim being to produce low-cost cotton by raising big acreages and through standardization of operation.

This year on the 1800 acres of the Olivedell plantation all cotton rows were planted 38 inches apart, and during April the tractors were operated night and day, because plowing had previously been held back by rain. It is generally recognized that the early plant cotton has the highest yield, and the tractor is a great help in speeding up operations after a rainy spell. The Olivedell company says that with two weeks of favorable weather, and with tractors they can plow and plant the whole plantation.

Timely preparation of the land is essential in getting in an early cotton crop in the Louisiana Delta, which has an annual average of 57 inches of rainfall, much of it in the spring months. Even with early maturing varieties now in use, it is vital that cotton be planted early so it will bloom before advent of the boll weevil. Other factors in early maturity are good seed bed preparation and good cultivation, the use of nitrate of soda, and timely poisoning for boll

weevil control. Tractors can pull bigger dusting machines and at a faster pace than mules can haul such equipment, and when poison has to be applied again after being washed off by rains, the advantage of the machine is obvious. Efficient tractor operation means also the cultivation of long, wide fields, and this makes possible the use of airplanes for dusting, a method steadily becoming more common in the Delta.

Although there seems to be little doubt of the advantage of the tractor in planting and cultivating, the question is sometimes raised, "If negroes are allowed to drift away, what will Delta farmers do for pickers until such time as the mechanical picker is developed to pick heavy cotton satisfactorily?" One answer is that for the past two years hundreds of itinerant pickers have stopped at the Olivedell plantation asking for work, modern methods of transportation bringing them from far and near. Furthermore, these traveling pickers get the cotton out quickly because they want to make their money and go on to new fields.

In a comparison of the time necessary to keep petty accounts on 200 families necessary under the mule regime and about one-fifth or one-sixth of that number required for tractor operation it was shown that mule operation costs about a third more than tractor operation.



Part of the Tractor Equipment Used on Olivedell Plantation, Lake Providence, La.

# 250,000,000 Cubic Feet of Natural Gas Daily Through World's Largest Gas Measuring Station

By  
LAURENCE HAZEN

CAPABLE of measuring 250,000,000 cubic feet of natural gas daily at a pressure of 250 pounds, the new metering station recently completed at Sterlington, La., by the Arkansas-Louisiana Pipe Line Co., a subsidiary of the Cities Service Co., is said to be the largest plant of its kind in the world. The equipment, including 38 meters and 19 recording thermometers, is housed in a single building 130 feet long. In each end of this building is a concrete block, 24 by 36 inches at the bottom and tapering to 8 by 24 inches at the top, supporting a specific gravity balance for use in determining specific gravity of the gas.

There are 21 "meter runs," as the parallel pipes passing through the station are called. Gas passes through these meter runs from the lines of the various producing companies supplying the plant, is measured by the meters inside, and enters the Munce compressor station nearby, in connection with which the new measuring station is operated. Separators, or "scrubbers," clean the gas before it enters the compressor, which sends the gas surging through a 20-inch pipeline to Shreveport, and through a 16-inch pipeline to El Dorado, Ark., and



Concentration of Pipe Lines at Meter Station, Sterlington, La.

*The pipes are the "meter runs". The three large ones at the right are connected with the Arkansas-Louisiana Pipe Line Company's lines. Other "meter runs" in the general view are as follows: Eight 6-inch lines and ten 12-inch lines. Buried in the foreground are three headers, one 16-inch and two 20-inch lines, for delivering gas to the compressor. Gas from the three large pipes on the extreme right enters one of the headers, that from the seven smaller runs on the left passes into a second header, and gas from the middle "runs" can be passed into the third header or, if desired, into any or all of the three headers.*

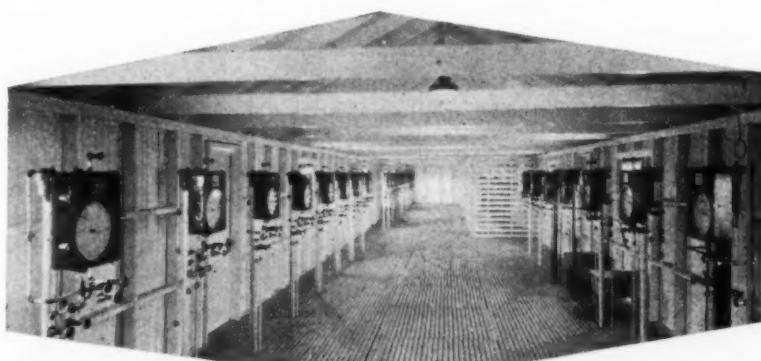
to towns and cities beyond these places.

Two other stations tabulate the flow of gas passing into the pipe lines. Three miles down the river from the compressor plant is one which records the gas flow to the Shreveport line. The El Dorado line gas is metered by a station

in Union parish. These are of necessity located several miles from the compressor to avoid vibration from the huge engines.

The gas is the property of various producers until it passes the meters, and then it becomes the property of the Arkansas-Louisiana Pipe Line Co. An interesting fact in this connection is that the Dixie Gulf Gas Co., one of the producing companies, buys back the gas at Shreveport, where it is delivered into the Dixie Gulf's pipeline to be transported to Texas as far as Houston. A major part of the gas passing through the metering station comes from the Richland Field.

Five companies supply the gas: Interstate Natural Gas Co., the Hope Producing Co., and the United Carbon Co., each with two 6-inch lines; Dixie Gulf Gas Co., with three 8-inch lines, and the Louisiana Gas and Fuel Co., with five 8-inch and two 6-inch lines. In addition to these the Arkansas-Louisiana Pipe Line Co. has three large meter runs connected with its own 12-inch lines and its 20-inch line from Alto, where the company has another measuring station with five 8-inch meter runs and four 6-inch runs.



Battery of Meters in Immense Gas Measuring Station

*Housed in a building 130 feet long, the flow of gas is recorded by 38 meters. Those at the right are owned by the Arkansas-Louisiana Pipe Line Co., those on the left by various companies from whom gas is purchased. The gas is thus "double-checked," measurements being recorded in ink on a circular chart. Thermometers record the temperature of the gas, an important factor in accurate measuring.*

July 10, 1930

## A New Farm Industry Develops in North Carolina

**Poultry Now Ranks Fifth in Value in State's Farm Output—One Development Which Offers Real Relief for the Farmer**

By F H. JETER, Raleigh.

**A**LMOST unknown to the people of North Carolina there is developing about them a great poultry industry affecting about 90 per cent of the farms and providing an income to many persons in distress through the growing of cotton, tobacco, peanuts and other so-called cash crops. I had the pleasure recently of spending a week with C. F. Parrish, extension poultry specialist, in a tour of the State, visiting some of the hatcheries and commercial plants.

The new industry is being builded on a sound foundation. The growers almost universally are following practices based on results of research work in past years by investigators in this and other states. One cannot but be surprised at the large incubators in use, the battery brooding systems installed, the use of tested, disease-free stock for breeding purposes and the better methods of feeding and sanitation which are followed.

Poultry ranks fifth in value among the farm industries of North Carolina. In 1928, say the poultry folks, it had a farm value of \$37,500,000 and cooperative carlot shipments by the farm agents are adding to this value because of the increased price secured and the definite market established.

This industry is based first on purebred flocks on the farms. It is founded further on good laying houses, incubator rooms and brooding houses built generally according to plans furnished free by the State College of Agriculture. Then, too, the poultrymen are learning the value of keeping flock records, of feeding mash and grain according to

nutrition studies made at the Experiment Station and using hatching eggs from tested flocks.

This blood-testing work is something new in North Carolina. It is based on the work of a young investigator, R. L. Dearstyne, who has found that the dreaded pullorum disease or bacillary white diarrhea which kills so many young chicks during the first days of their lives, may be controlled if reactors to the test are culled from the flock. Through a cooperative arrangement with the State Veterinarian's office last year, the poultry specialists tested about 77,000 laying hens supplying eggs to the principal hatcheries. The results were

or meet with some other mis-adventure rather than die of the chick disease.

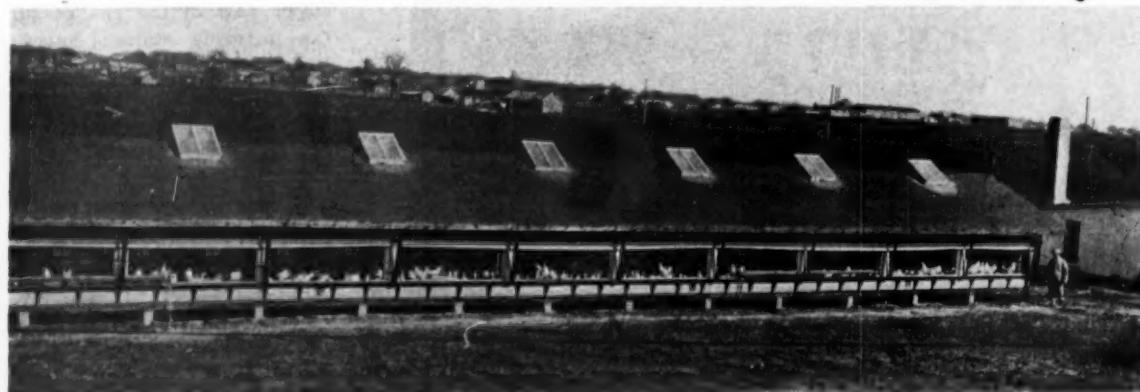
The Bunch Hatchery near Statesville is run by a woman, Mrs. B. H. Bunch and is an example of a profitable poultry industry. There are about 50 flocks near Statesville from which Mrs. Bunch gets her supply of purebred hatching eggs. There are from 5000 to 6000 tested and culled breeding hens in these flocks. Mrs. Bunch buys all the eggs in season, paying a higher price than the owners could get elsewhere and together with the eggs from her own flocks, hatches them for the poultrymen round about. Mrs. Bunch has one 47,000-egg capacity incubator and two small 15,000-egg capacity machines. They are kept busy during the entire hatching season. She is giving to the poultrymen sound, disease-free chicks that will grow into money-making broilers or high producing hens which in turn will pay a profit. For herself, her gross sales of baby chicks last season were about \$15,000.

Visit S. L. Cline, disabled soldier and owner of the Sterling Poultry Farm near Valdese in Burke County. Mr. Cline has 400 breeding birds of the white leghorn strain from which he averages 300 eggs a day throughout the year. He says it costs him 10 $\frac{1}{4}$  cents a dozen to produce eggs and he sells all he can produce at an average of 28 cents a dozen. He has two incubators, one for hatching eggs from tested flocks and the other to do custom hatching. The two machines have a capacity of 23,000 eggs and Mr. Cline generally hatches about 70,000 eggs a season. He charges the poultrymen who want their



Agent Helping With Problems of a Wake County Farmer

astounding, no other word describes them. Say, a bunch of 500 chicks would be hatched this spring from eggs supplied by blood-tested hens. Losses would be only five or six chicks out of the total hatched and most times these five or six would be smothered, chilled



On the Howard Poultry Farm, a Laying House Where Pullets Are Trap-Nested

eggs hatched in his machines  $3\frac{1}{2}$  cents an egg. This work and the proceeds from his own flock give him a comfortable income. He admits to \$3000 a year clear cash.

Kenneth Howard of Dunn, down in the cotton empire of lower eastern Carolina, is another hatchery operator supplying purebred baby chicks from selected stock. Mr. Howard is also a veteran of the World War who has found a profession that he likes. Practically all the chicks he sells come from eggs produced by his own strain of trap-nested Hanson leghorns. Each year now between 1000 and 1500 selected pullets are trap-nested and those with the best records are carted to the 12 colony breeding houses. From these come the eggs for his flock development and for producing the roosters needed for breeding. Some of these hens have records of 210 to 314 eggs each in a year. All the male birds used in the breeding pen are from 300-egg hens. There are about 3500 young hens and 1600 old hens for breeders on the Howard farm which is well equipped and the birds pay their way. During 1929 he sold about \$16,000 worth of eggs, baby chicks and broilers. Orders for baby chicks come from many states.

But these are hatcheries, you may say; what about the general farmer?

other egg save that laid on his place to come on the farm. He sells a few baby chicks but depends largely on the sale of "eating" eggs for his income. His flock is handled as a farm flock only, practical and not fancy, but it pays a good income and one feels the enchanting spell of contentment and well-being on that farm.

B. Austell in Cleveland County has an average farm flock on which he

want a good pure bred flock from which to get a supply of eggs and broilers for home use with some to sell for cash. It is not uncommon now to hear boasts about good stock, or high laying ability or winnings at poultry shows.

Mr. Parrish says the incubator capacity of the State is now about 1,332,480 eggs. Requests for blood-testing more than 150,000 hens have been made by flock owners who want to produce only



A Brooder House near Brick Incubator House on the Howard Farm at Dunn, N. C.

keeps records for the poultry department at State College. His flock averaged 1141 birds during the past six months and paid him a labor income

healthy, vigorous chicks. The number of laying hens now on the farms of the State is said to be 5,964,739. There are 331 definitely organized poultry clubs with thousands of boys and girls as members. Community and county poultry associations are being formed and these are agreeing on one standardized breed for a particular county. During a six months period in 1929, nearly 6,000,000 pounds of live poultry was shipped cooperatively in carlots by county agents cooperating with the State Division of Markets.

And so the story could go on. But enough has been said to show the widespread interest in poultry and to reveal that a new industry is being developed. This new industry can and is adding to the income of farm folks and in the future will make hard crop years easier to bear.



A Co-operative Poultry Shipment With Philadelphia As Its Destination

Let Joe A. Nicholson of Saxapahaw in Alamance County tell how his farm flock brings him an income of \$250 a month. He has 150 acres in his farm, most of it now planted to crops that may be marketed through the poultry flock, the dairy herd or the swine. He keeps an average of about 2000 Barron strain white leghorns and these 2000 hens produce about 800 eggs a day throughout the year. A large grocery concern in Greensboro takes every egg, pays for them at market price and sells them to consumers in a special carton. Mr. Nicholson has his own incubator of 4800-egg capacity and never permits any

above feed costs of \$2501 for the six months period.

Mrs. A. M. Smith of Wake County tells an interesting story of how she made a net profit of \$2079 from an average of 650 hens on her small farm near Raleigh. "If it hadn't been for our poultry last fall, I don't know what we would have done. I am sure we would have been sold out by the sheriff," she said.

Many hundreds of other farmers in North Carolina can readily testify to the value of poultry. Not all of them care to go into the hatchery or commercial business but most of them do

#### Low Bid on \$2,500,000 Union Station

Oklahoma City, Okla.—Low bid to erect the proposed \$2,500,000 union station here for the St. Louis-San Francisco Railway Company, F. G. Jonah, chief engineer, St. Louis, and the Chicago, Rock Island & Pacific Railway Company, C. A. Morse, chief engineer, Chicago, has been submitted by the Tankersley Construction Company, Oklahoma City. The building will be 360 by 222 feet, of Bedford limestone construction and Moorish architecture. There will be two covered platforms 1300 feet long and one of 1000 feet.

July 10, 1930

## Record Importation of Vegetable Oils Last Year

FOR the second successive season, the world supply situation in vegetable oils and raw materials has been favorable to consumers, especially those using the non-drying oils, reports the Agricultural Department. The international trade in those commodities has been expanding, notably in copra and coconut oil, which has in turn stimulated the already increasing production of edible products which compete with such products as butter and lard. The downward turn in prices of vegetable oils, especially since the middle of 1929, has tended to depress further the lard and butter markets in most importing countries at a time when demand for those products was weakening. This tendency toward lower prices following heavy production was aggravated by a downward movement of the general commodity price level in practically all countries.

The United States imports of all vegetable oils and oilseeds in 1929 expressed in oil equivalents reached the record total of 1,054,000 short tons. The trade exhibited the tendency of recent years to increase imports in the form of oil rather than as raw material. Under the terms of the Tariff Act of 1930, recently become law, many of the oleaginous materials entering the United States from foreign countries will pay rates of duty higher than those embodied in the Tariff Act of 1922. All but a small proportion of the copra and coconut oil imports will continue to enter duty free, however, since nearly all the imports come from the Philippine Islands. The new rates will be of greater significance in the drying oils situation, since practically all such materials entering the United States will be dutiable at advanced levels.

### *Supplies of Vegetable Oils*

The largest olive oil crop of the past five years raised the world's supply of edible oils and oils used principally for soapmaking for the 1929-30 season considerably above the usual level. In 1928-29 a small olive oil crop reduced the total supply below the volumes available in the 1927-28 season. Liberal supplies of cottonseed oil are available in the United States following the increased production of cottonseed in 1929. That crop was larger than in either of the two preceding years, but below the record 1926 crop. Russia is the only other major producing country to report a 1929 cottonseed production larger than in 1928. In the United States the size

### New Tariff to Aid Domestic Producers

of the domestic cotton crop is the governing factor in the competitive position of cottonseed oil with respect to animal products, notably lard. In copra and coconut oil, however, all important producing countries appear to have available unusually large quantities for export. Production in the Philippine Islands has been increasing steadily for the past 20 years. Most of the output comes to the United States, where it forms the basis of the oleomargarine and soap industries.

Of the other vegetable oil materials important in international trade, peanuts appear to be in smaller supply than last year owing to smaller crops in India. That country sends most of its export surplus to Europe. In the United States the peanut oil requirements have been well satisfied by a large domestic crop. There has been some reduction in peanut imports, but such imports are used almost exclusively for confectionery and edible nuts. The large current olive oil crop has been accompanied by materially increased imports of that commodity. It appears, however, that that crop may be of greater significance indirectly in connection with its effect upon the European markets for other vegetable oils, butter and lard.

The world supply of material for producing drying oils is definitely under that of last year. Sharp cuts were registered in the 1929 crops of linseed in all important producing countries. The hempseed crops so far reported show a small increase over 1928 and the total supplies of soy beans show little change, but neither of those crops make much impression upon the general shortage of drying oils. There are some indications of increased acreages in the Northern Hemisphere for the 1930 crop. Somewhat larger quantities of Chinese wood oil came forward in 1929 than a year earlier.

### *Cottonseed*

Preliminary figures on the world production of cottonseed indicate that the production for 1929-30 will be about equal to that of 1928-29. Production in the United States increased 153,000 short tons, and production in Asiatic Russia increased 130,606 short tons, but the output in the other countries reporting decreased 104,409 short tons. In 1929

British India produced about 39 per cent as much cottonseed oil as the United States, and China about 12 per cent as much. Brazil is the largest producer of cottonseed in South America. Brazil, Peru and Argentina find a market in neighboring countries for their surplus. No figures are available for 1929. Egypt exports cottonseed but crushes for oil only enough for domestic use as there is no demand for the seedcake. Shipments of Bombay cottonseed to the United Kingdom have declined as Egyptian seed shipments increased.

### *Peanuts*

India, which accounts for about 54 per cent of the world's commercial peanut supply, reports that the 1929 crop of 2,728,000 short tons is the smallest since 1926. Senegal also reports a smaller crop. The bulk of the exports from those countries goes to Europe. China also sends most of its export peanuts to Europe, but that country is the leading source of peanuts imported into the United States. Chinese peanuts imported into the United States are for edible purposes, while the Chinese peanuts going to Europe are used largely in the oil crushing industries. With plentiful supplies of olive oil available in Europe, it is reasonable to expect some reduction in the demand for peanut oil, particularly in the Mediterranean countries. Indications are, however, that European buyers are still actively interested in Chinese peanuts. The declining rate of silver exchange in China has been a factor supporting that interest. Germany produced 265,000 tons of peanut oil in 1929 against 244,000 tons in 1928. The 1929 production in France reached 253,000 tons against 233,000 tons a year earlier.

Copra production increased in 1929, and total shipments set a new record at 918,340 tons compared with 905,398 tons in 1928. In 1929 the United States imported 254,880 tons of copra; in 1928, 223,652 tons. In addition to the copra, the United States also imported 183,000 tons of coconut oil in 1929, against 129,750 tons in 1928. Of the shipments of coconut oil to the United States, 99 per cent comes from the Philippine Islands.

### *Soy Beans*

There appears to be an increasing demand for soy beans. Manchuria is the largest producer with a 1929 crop estimate of 4,432,660 short tons, 79 per cent of which was exported, about one-fourth as soy-bean oil and the remainder

in soy beans. In the United States production of soy beans has increased; about 25 per cent of each year's crop is harvested for beans but only one-fifth of this amount is crushed for oil. No soy beans are imported for crushing, but soy-bean oil from Dairen, South Manchuria, is imported into the United

States. In 1929 the United States took 26,717,531 pounds of soy-bean oil from China compared with 17,404,465 pounds in 1928. Soy-bean oil is produced mainly in Germany, Denmark, Japan, China and the United Kingdom. Imports into the United States are much larger than domestic production.

VEGETABLE OIL PRODUCTION OF MORE IMPORTANT MATERIALS IN TERMS OF OIL IN IMPORTANT PRODUCING COUNTRIES.

Variety	Oil equivalent Per cent	1925 Million pounds	1926 Million pounds	1927 Million pounds	1928 Million pounds	1929 Million pounds
<i>Oils chiefly used as edible oils and for soap making—</i>						
Cottonseed	15	3,530	3,511	3,511	3,682	3,577
Coconut	65	1,513	1,686	1,725	1,960	2,061
Peanut	28	2,596	2,506	3,060	3,208	2,800
Olive	—	1,442	1,287	2,349	1,481	2,516
Soybean	15	1,143	1,346	1,361	1,355	1,350
Palm kernel	45	584	575	588	563	...
Palm, incl. some kernel oil	—	447	412	436	398	...
Sunflower	22	1,295	830	1,111	1,141	...
Rape	38	1,219	1,004	1,017	892	881
Sesame	45	522	538	656	590	540
Total comp. 1929	...	14,300	13,636	15,445	13,384	13,725
Total reported for 1925-1928	...	14,300	13,695	15,814	15,270	...
<i>Drying oils—</i>						
Flaxseed	33	2,653	2,648	2,713	2,644	1,932
Hempseed	30	408	390	408	398	405
Chinese exports of wood oil	—	119	100	120	101	119
Total drying oils comp. 1929	...	3,061	3,038	3,121	3,042	2,337

### Potash From Texas Polyhalite

A detailed study of the properties of Texas polyhalite with the possible application of these in the industrial extraction of potash in view, has been conducted during the past two years by the Nonmetallic Minerals Experiment Station of the United States Bureau of Mines. Some results of these investigations have appeared in Bureau of Mines Bulletin 316, and further data will be published in the near future as Reports of Investigations.

Two processes have been developed, one of which produces potassium sulfate and the other both potassium sulfate and a double salt containing magnesium and potassium sulfates. Preliminary cost estimates show that the average cost of producing 90 per cent potassium sulfate by either of these processes will be \$16 per ton at the plant, and the cost of producing the double sulfate of potash-magnesia will be \$8 per ton at the plant. If a reasonable freight rate to seaboard can be obtained, it is probable that potash from Texas polyhalite can successfully compete with the imported products.

Further investigations have been made on extraction of calcined and uncalcined polyhalite with saturated salt solutions, and the data thus far obtained show that it will probably be possible to develop an industrial process for manufacture of muriate of potash from Texas polyhalite.

Results have also been obtained concerning the rate of decomposition of polyhalite by water at atmospheric tem-

peratures using varying ratios of polyhalite to water. These data show that the use of finely ground polyhalite per se as a fertilizer is possible, the rate of decomposition being rapid enough to dissolve all the potash in a few days assuming a temperate climate where a ratio of 6 parts of water to one of polyhalite is feasible.

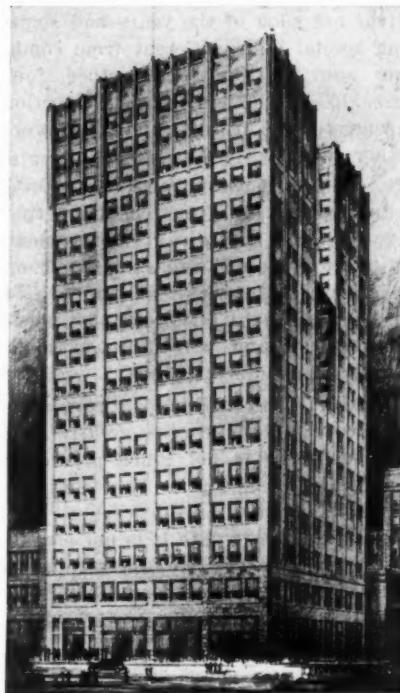
### To Promote Cotton Textiles Exports

Steps recently taken for the formation of a cotton textiles export organization, under the Webb-Pomerene law, are expected to result in a permanent organization, July 15, when another meeting of the promoters will be held in New York. The association is to be made the medium for "furthering cooperation among exporters of cotton textiles with respect to uniform terms and other matters properly subject to group action to increase the export business of American cotton goods."

The firms represented at the preliminary meeting were: Amory, Browne & Co.; Joshua L. Baily & Co.; William L. Barrell Company, of New York, Inc.; M. C. D. Borden & Sons, Inc.; Brune, Pottberg & Co.; Garner & Co.; Hunter Manufacturing & Commission Co.; Iselein-Jefferson Co.; Minot, Hooper & Co.; Neuss, Hesslein & Co.; Pacific Mills; Pepperell Manufacturing Co.; Prince, Lauten & Co.; Tilton & Keeler, Inc.; Turner, Halsey Co., and Wellington, Sears & Co. Other concerns also are expected to join the movement.

### \$750,000 Kansas City Building Addition

Contracts were awarded recently by the Dierks Investment Company, Kansas City, Mo., for construction of 10 additional stories to the Gates Building (now Dierks Building), at a cost of approximately \$750,000. The present unit will be remodeled on the first floor to provide an additional elevator lobby and new elevators will be installed to serve the completed structure. A light court will be recessed into the north wall of the section to be added. General contract is being handled by the Swenson Construction Company and contract for mechanical equipment by the Interstate Plumb-



Dierks Building, Kansas City.

ing & Heating Company, both of Kansas City. The Edward P. Allison Company, St. Louis, has elevator contract for electrical work. Hoit, Price & Barnes, Kansas City, are architects. An accompanying illustration presents a view of the building as it will appear when completed.

### Preparing for Petroleum Congress

Progress in preparations for the International Petroleum Exposition and Congress at Tulsa, Okla., October 4 to 11, is announced in a statement that 472 booths have been sold, also a great amount of outside space for rigs, compressors, trucks, tractors, etc., which do not lend themselves well to showing in the booths. Two major buildings have been erected, the Refiners and Marketers building and the California building.

## IRON, STEEL AND METAL MARKET

### Steel Activity Presumably at Low Point of Year

Pittsburgh, July 7—[Special.]—According to precedent and analysis of present conditions, activity in steel is now at its lowest point. July has regularly been the low month when there was summer dullness except that in 1928 June was the low month. According to precedent there should very shortly be an increase in demand, leading to heavier steel production in August than in July. In three of the last seven years there was no autumn revival but each of the years had something special in it, different from conditions now existing. The other four years all showed more steel production in August than in July, and there were further increases later.

It is a fact, however, that many steel producers are far from confident that there will be any great improvement. The majority predict some improvement, but among those who make no predictions there are in all probability some who fear demand will decrease somewhat further.

A general and widespread revival in business would of course greatly help steel but there is not much predicting along that line, and given the conditions that have existed in the various steel consuming lines to date it is not easy to pick out many that are likely to show improvement in steel requirements of their own initiative so to speak.

Steel production last week was much affected by the holiday and the total volume if it could be estimated would not be indicative of anything important. Production the week before was at about 63 per cent of capacity and in the whole month of June about 66 per cent. These appear to be low rates but on account of increases in capacity every year the tonnage is not so poor. June production, in fact, while well under last year or year before, was around the average of June in preceding years.

Steel buying by the automobile industry has been extremely light as some large producers are taking much time off this month. Considerably heavier automobile production is to be expected in August and buying against that should begin shortly.

The monthly report of the car service division of the American Railway Association, giving details of car ownership, installations and retirements in May, shows that there were more freight cars on order June 1 than had been supposed. The roads reported 7304 cars installed during May, and 28,696 on or-

der at the close of the month, which would mean installations at the May rate up to the end of September. There has been very little fresh buying of cars and little is expected.

Fabricated structural steel contracting continues active and the fabricating shops are very well filled with orders, almost as well as last September.

No large line pipe buying was reported last week, but producers are filled for several months on the large sizes, at least from 10-inch up, and there are many projects, making it likely that some line pipe laying will have to go over to next year purely through lack of capacity. Probably there will be enough laying in the South during the winter to keep capacity employed when pipe cannot be laid in the North. Standard or merchant pipe is in light demand as has been the case all this year.

Prices of finished steel products are not altogether steady in most cases, but they are not slipping in any marked fashion. Possibly there is not as deep shading on bars, shapes and plates as a few weeks ago, though this might be due to absence of large orders coming up for figuring. On moderate sized lots down to single carloads merchant bars are now quotable at 1.70c to 1.75c, against 1.75c formerly quoted. Plates and shapes remain at 1.70c on small lots. Galvanized sheets are a shade easier. Nails are well held at \$2.15 in the Pittsburgh district but there is shading in various other sections.

Pig iron markets continue very dull but some sellers state they see signs of some little increase in buying by foundries in the near future.

### Zinc at Very Low Figure—Tin Declines

New York, July 7—[Special.]—Conversation in metals circles centers on the depths to which zinc prices have sunk. Early in the week the low price of 1921 was passed in the downward movement until quotations were the lowest since 1907 when 4c was reached. The bottom price of 1921 had been 4.12½c, East St. Louis, whereas during the past week sales were made nearly as low as 4c per pound. The situation is serious for the zinc producers. Production has not been curtailed further chiefly because of the friendliness of the producers and their employes, the former wishing to keep labor employed.

Tin began declining rather sharply as the June statistics poured in. Thus

the world's visible supply increased 2840 tons during the month to 42,611 tons, the largest on record, which is the case also with surplus stocks of zinc. American tin deliveries were 5885 tons and for the first half of this year they have been 10,000 tons under those for the first half of 1929, representing so much less consumption in this country. In the case of tin definite plans for curtailment have been laid. Many producers of the world supposedly shut down mines July 1 and others will close August 1, in all cases for two months, according to plans. There is some skepticism as to how closely the programs will be followed.

Lead and copper have remained fairly steady in price, lead at 5½c per pound and copper at 12 cents per pound. The minor metals are steady. Silver fluctuates between 33½c and 34c per ounce, which, though lowest levels in history, represent no fresh market weakness.

The steel industry is invariably at the lowest ebb of the year at this season and the present is no exception. Late in the week the general average was 50 per cent but this is only temporary. By this week the pace will probably be back to 60 per cent. However this is very low by comparison with 1929 and 1928. One cheerful happening in the steel industry was the issuance of pig iron production statistics for the first half of the year. This production was 1½ per cent under that for the corresponding period of 1928, though 16 per cent under the first half of 1929.

Consumption of the non-ferrous metals proceeds slowly. The automobile industry, the building industry and the electrical manufacturers are consuming much less metal than a year ago. Consumption of tin in the canning industries is about normal. Zinc consumption in galvanizing operations is a bit below normal.

Copper statistics for June will be out the twelfth of this month. Observers have been unusually wary against making predictions this time since so many predictions went wrong on the May figures. It would seem that a reduction in surplus stocks of 15,000 tons would appear reasonable, the first decline for many months.

The effect of low selling prices in copper has been seen in various ways. Some of the small mines are passing dividends and the large producers have cut dividends in half. Some of the small mines are not shipping ore to the smelters, holding it for a higher market.

At the middle of the week there were reports to the effect that one or two custom smelters were cutting the 12-

cent price to 11½c or even 11¾c. This is not surprising in view of the dullness of domestic business. However export sales have been quite active for this time of year, having averaged 1000 tons daily over the past week. The export price has been unchanged at 12.30c per pound, c. i. f. (cost, insurance and freight) to Hamburg, Havre and Liverpool.

It is generally expected that copper prices will fluctuate between 11½c and 12c during July, with the latter price more common during that period. During August it is easy to imagine some stiffening of the price structure, if business improves only moderately. A few predictions have been made to the effect that prices will go down to 10 cents before the end of the summer. However during the past thirty years copper has not dipped below 11 cents and has remained at that level only for a few days at a time.

Tin has been selling at a little over 30 cents per pound, which compares with the extreme low point of 29½c about three weeks ago. Though supplies in warehouses, in consumers' hands and at producers' plants are still increasing, the ambitious program of mine curtailment has imparted hopes for the future. The Tin Producers Association, London, keeps emphasizing that most tin producers are losing money at today's prices.

When the price of zinc reached 4.10c, East St. Louis, there was better pur-

chasing, though the market was far from brisk. In fact, on Wednesday the price was lifted to 4.15c, though this was believed to be but a temporary betterment.

Lead business also has remained light and prices have been unchanged at 5.25c per pound, New York, and 5.15c, East St. Louis. About one-third of the July needs remain to be bought and August needs have so far been very sparsely covered.

#### Southern Furniture Show

High Point, N. C.—Plans for the mid-summer Southern Furniture Show to be held in High Point from July 21 to August 2, inclusive, are being worked out by officials of the Southern Furniture Exposition Building, Inc. More than 6500 invitations have been sent to retail dealers throughout the country and it is anticipated the attendance will be the largest in the history of the show. C. F. Long is manager of the building corporation.

#### Work Progressing on Dormitory

Columbia, S. C.—Brick and stone work on dormitory A being erected here by Stephens College has been completed and the building roofed. Jamieson & Spearl, St. Louis, are the architects and the John Epple Construction Co., Columbia, general contractor.

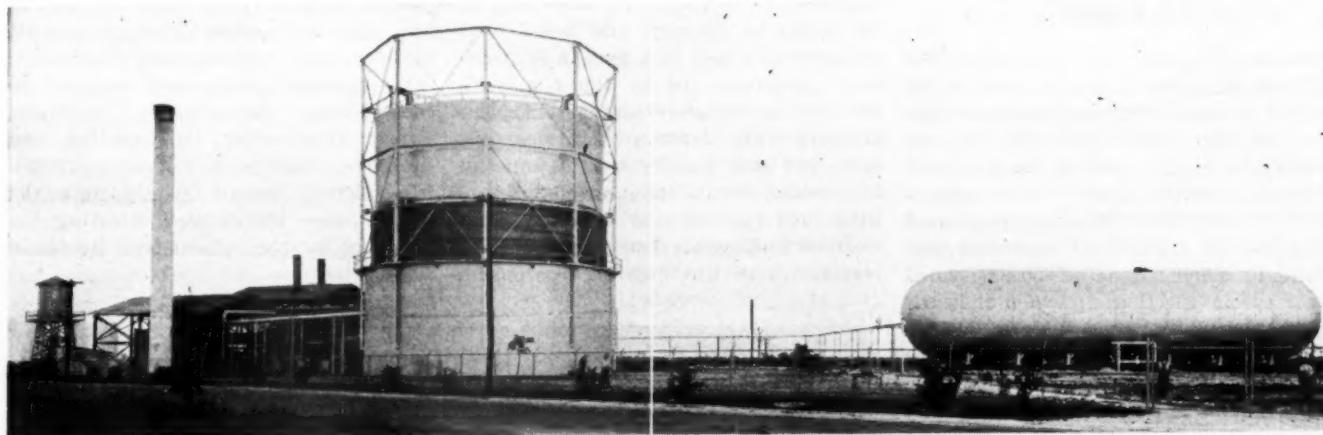
#### Utilities Improvements Planned

Louisville, Ky.—Work orders for expansion and improvement of service facilities of the Kentucky Utilities Co., Kentucky Power & Light Co. and the Old Dominion Power Co., have been approved and construction activities will start at once. The most important items in the improvement program will involve the enlargement of the boiler room at the Maysville generating station and the installation of a water-tube boiler and multiple retort stoker, to cost \$60,000, and 8 miles of 33,000-volt transmission line from the Pineville station to Anchor, Ky., which will form a section of a proposed line from the Pineville plant to Williamsburg, the present work to cost \$56,500.

#### 16-Story Allied Arts Building

Lynchburg, Va.—A corporation is being formed here with E. C. Ivey, Jr., president; E. H. Hancock, vice-president, and L. C. Acree, Jr., secretary and treasurer, to acquire a site and erect a 16-story Allied Arts Building at Eighth and Church streets, and a garage adjoining to accommodate 100 cars. The structure will be 40 by 132 feet, with commercial space on the ground floor and offices above, the latter to be served by high speed elevators. Stanhope S. Johnson and R. O. Brannon are the architects, and C. W. Hancock & Sons, general contractors, all of Lynchburg.

### Modern Gas Plant for a Florida Town



The gas plant here shown was completed last year at Fulford, Fla., by the Gas Company of Miami Beach. It has two eight-foot water gas sets hydraulically operated and equipped with cooler gas connections and reversing valves in the seal separators. This equipment was furnished by the Gas Machinery Co., Cleveland, who also provided the blasting and charging apparatus, cooling scrubber, coils, pumps and piping. Purifying equipment consists of two 20 by 25 by 12-foot steel boxes for duplex operation. The bullet type high pressure holder of 200,000 cubic feet capacity and the 100,000-cubic foot capacity relief holder were built by Stacey Brothers Gas Construction Co., Cincinnati. The Combustion Engineering Co., New York, furnished two 225-horsepower boilers, while the Truscon Steel Co., Youngstown, Ohio, supplied the steel. The project was handled by the General Engineering & Construction Co., Miami Beach, Fla.

## AVIATION, AIRPORTS AND AIRWAYS

### Weather Forecasts for Airways

Washington, D. C.—According to the U. S. Department of Agriculture, the Weather Bureau is expanding its service in the aid of aviation, which will provide frequent and regular weather reports covering approximately 13,000 miles of airways. This service will be effective in a short time and the reports, it is said, will be in sufficient detail to meet existing needs. On 8000 miles of these airways teletype lines will provide 24-hour communication with exchange of reports once each hour, while the remaining 5000 miles will be served by reports transmitted by telephone or telegraph at such intervals as will best meet current needs. The Bureau will provide a limited service on nearly 3000 miles of airways, over which there is yet comparatively little flying. Through the co-operation of the Navy Department, the Bureau is continuing its investigations with kites, captive, pilot and sounding balloons and airplanes, and is now engaged also in studies of ice formation on aircraft, turbulence or gustiness and other problems. For all phases of its airways forecasting and studies, the Bureau has an appropriation of \$1,400,000.

### COMPLETING SHREVEPORT AIRPORT

#### Expected to Be One of Most Important in Country

Shreveport, La.—The new municipal airport here which is expected to be opened in September promises to become one of the most important in the United States. Located on the Southern Transcontinental Airway, it occupies a site of more than 300 acres purchased at a cost of \$150,000. Funds were provided by a bond issue of \$300,000 voted at a special election, at which time the city also voted a bond issue of \$1,500,000 with which to purchase the site for the Third Attack Wing field. The flying field will be supplemented by a 3-story administration building of Spanish architecture, the first floor to house a waiting room with all the facilities of a railway station. Provision will be made on the second floor for sleeping quarters for men and women and a club room for pilots, and on the third floor for a roof garden, dining rooms, kitchen and dance floor. On one corner of the building there will be a 65-foot tower in which the control room will be located

from which the field lights will be controlled. These will consist of two banks of seven 300-watt lights each. Surrounding the field there will be a string of boundary lights spaced 300 feet apart. All buildings will be flood-lighted and on the hangar a tower will carry a beacon light. A ceiling light and height indicator will also be provided.

The walls of the administration building will be of cream colored brick backed up with hollow tile. Concrete floors will rest on steel joists and an extensive concrete apron and walkway will be installed on the field side of the structure. The grounds will be landscaped and parking space for 1500 cars provided on land adjacent. A temporary all-steel hangar will be erected, 100 by 100 feet, to contain space for a machine shop, supply room, locker room and office, in addition to room for planes. Plans and specifications for the project were prepared by the Southern Air Transport Company, with Wings, Inc., as the local agency. O. L. Hazelwood is the company architect and B. A. Slater is representing the company in Shreveport as its engineer.

### \$650,000 Bids on Flying School

Schertz, Tex.—A tabulation of bids by Captain A. W. Parker, Constructing Quartermaster at Randolph Field, near Schertz, for the construction of buildings for the flying school there, indicates the structures will cost about \$650,000. Estimates were opened on the following: Academic building, L. T. Wright & Co., San Antonio, Tex., low bidder at \$86,749; steel frame for same, John Westerhoff, San Antonio, \$93,250; administration building, Murch Brothers Construction Co., St. Louis, Mo., \$209,000; plumbing and heating, Kirkwood & Wharton, San Antonio, \$30,370; wiring, Martin Wright Electric Co., San Antonio, \$8639; elevators, San Antonio branch of Otis Elevator Co., New York; operations and parachute building, Sumner-Sollitt Co., San Antonio, \$74,780; air corps shops, L. T. Wright & Co., \$142,414; Ralph Cameron is architect for the academic building; Atlee B. and Robert M. Ayres, for the administration building, and Henry T. Phelps for the air corps shops, all of San Antonio. W. E. Simpson & Co., San Antonio, are the engineers for these three structures.

## Modern Airport at Chattanooga

Lovell Field, Chattanooga, Tenn., which opened for operation on June 1, represents an investment of more than \$250,000. It is about six miles east of the center of the city, and has a total area of 130 acres. The hangar is a one-story structure, 100 by 120 feet, with 19 feet overhead clearance. It has masonry walls, built-up roof, steel columns and steel roof trusses. Equipment is provided for overhauling motors and wings and for charging batteries. Four electric fueling stations are provided, together with fire fighting equipment.

A three story terminal and administration building houses public waiting rooms, mail room, weather and radio rooms, pilots' waiting and lounge room and manager's office. Built-up asphalt taxiways and runways are provided.

Chattanooga contractors engaged in constructing the project included: Brown Contracting Co., grading and drainage; Rogers & Leventhal, buildings; Terrell Electric Co., electric work; John Cuneo Plumbing & Heating Co. Engineer for the airport was Benjamin King, Chattanooga.

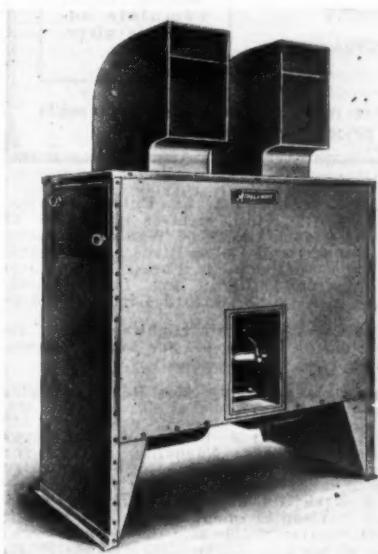


Chattanooga's Municipal Airport

## NEW AND IMPROVED EQUIPMENT

### Industrial Heating Method

The Skinner Brothers Manufacturing Company, Inc., St. Louis, Mo., unit heater manufacturers, announce a mechanical means for applying a new principle of distributing heat in industrial and other large buildings. The Airblanket method of heating, as the sys-



Floor Type of Unit Heater

tem is called, is said to apply a new idea to heating large open space buildings, employing specially designed unit heaters patented by the company. It is described as an industrial heating process in which a blanket or ceiling of low-temperature fast-moving air is projected horizontally over the breathing zone of a building for the purpose of holding in that zone the warm air issuing from a unit heater. This enables the warm air, it is said, to give off its warmth without loss of heat.

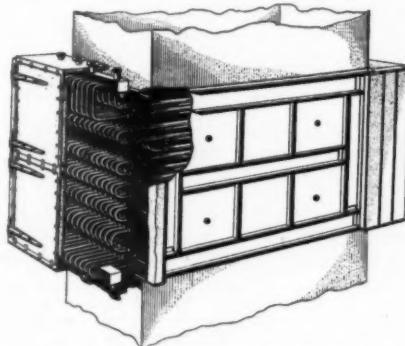
Skinner engineers declare the use of the new method will make possible large savings in the cost of heating industrial buildings, particularly those of saw-tooth and monitor types, this assertion being based on the fact that the necessity of first filling the space above the breathing zone with warmth before the breathing zone itself may be properly warmed, is done away with. Loss of heat in many industrial buildings through skylights, upper sash and other parts of the building above the breathing line is considerable. Assuming that the Airblanket method of heating will keep the temperature in the zone between the breathing line and the roof reasonably close to the temperature at the breathing line, as is claimed, heat losses through the roof would be materially reduced. The company has tested the method under actual

working conditions over a period of three years and in different types of buildings, and data on the tests and installations are available.

### Extended-Surface Economizer

The Combustion Engineering Corporation, New York, recently placed on the market the C-E economizer, fin-tube type, which may be installed at a great saving in space. Principal features of this unit are its external return bends, internal return bends, tube arrangement and the use of finned tubes to provide additional heat-absorbing surface. The heat-absorbing elements are constructed by connecting a U-bend to two straight tubes to form a U-tube. The open ends of each U-tube are connected serially by return bends located outside the end plates to the tubes directly above and below.

Adjacent vertical tube sections are arranged so that open ends of the U-tubes alternately enter one end and the other of the economizer casing. There are two water circuits, both served by



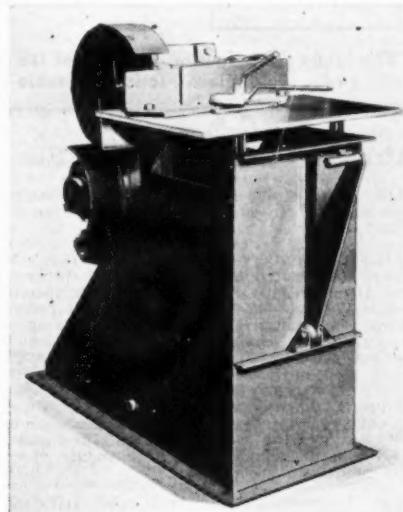
C-E Economizer, Fin-Tube Type

common inlet and outlet headers. Compactness of the unit is effected principally by the fin-tube design which reduces the tube length per square foot of heating surface, and the return bend arrangement which permits the tubes to be nested closely together. End plates may be easily removed for inspecting and cleaning the tubes.

### Ryerson High Speed Cut-Off Saw

The No. 00 high speed cut-off saw is the latest addition to the Ryerson line of high speed metal cutting saws and is the smallest unit now offered. It is a light machine, stated to be low in price, and designed for cutting light gauge steel moulding and small shapes of non-ferrous material such as brass, copper, aluminum, etc. Solid steel sections from  $\frac{1}{4}$  to  $\frac{3}{8}$ -inch round or square can be cut with the regular toothed

blade. Sections slightly larger can be cut with the abrasive disc. Any aluminum or brass sections that will fit into the work table are quickly and easily cut, it is said. No water or other coolant is required. The entire unit is built into a rugged frame of welded structural steel. The blade is mounted on an arbor carried by two heavy double row self-aligning ball bearings and driven by a triple V-belt and



A Light Machine for Cutting Small Shapes

3-h. p. motor. Guards completely enclose blade and V-belt drive. The unit is manufactured by Joseph T. Ryerson & Son, Inc., Chicago.

### Pine Association Meeting

The mid-summer meeting of subscribers to the Southern Pine Association will be held at the Peabody Hotel, Memphis, Tenn., on July 16, at which a careful study will be made of conditions existing among Southern pine lumber manufacturers and plans formulated to meet them. A meeting of the new Advertising and Trade Extension Committee of the Association will be held, as well as a meeting of the board of directors.

### Offer \$5,000,000 Road Bonds

Jefferson City, Mo.—A road bond issue of \$5,000,000 will be offered August 1 by the State Board of Fund Commissioners to take care of commitments already made and yet to be made for highway construction to be completed this year and in 1931. This is a part of a \$75,000,000 issue voted in 1928 and will bring the total of bonds sold in the last 12 months to \$22,500,000.

# CONSTRUCTION DEPARTMENT and NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

**Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.**

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

## Airports, Airplane Plants, Etc.

**Ark., Arkadelphia**—J. H. McMillan, George Boon and associates interested in erection of airport.

**Ark., Little Rock**—City, Pat L. Robinson, Mayor, to acquire landing area of Government Intermediate Air Depot and adjacent property; comprise municipal airport; Love-Sultan, Inc., 6625 Delmar Ave., St. Louis, Mo., in charge of erection of buildings and drainage of field.

**Fla., Tampa** — McMullen Aircraft Corp., Tampa Blvd., advises lease of Drew Field has not yet been granted, but if granted contemplate erecting office and administration building and large building for repair shop, dope room and stock room. 6-19

**Ky., Louisville** — Louisville and Jefferson County Air Bd., Addison W. Lee Jr., Chmn., reported, authorized building of from 6 to 8 small airplane hangars at east end of Bowman Field.

**Ky., Louisville** — Louisville & Jefferson County Air Bd. advises regarding report city plans \$100,000 hangar, Bowman Field: "Have no knowledge such a building being contemplated; however, we are building temporarily 5 T-shape hangars." 6-26

**Md., Baltimore** — B/J Aircraft Corp. formed as reorganization of Berliner-Joyce Aircraft Corp., recently merged with North American Aviation Corp., C. M. Keys, Pres., 40 Flatbush Ave. Extension, Brooklyn, New York; Thomas A. Morgan, president of Sperry Gyroscope Co., another subsidiary, to be president new company.

**Miss., Yazoo City** — Yazoo County Chamber of Commerce and Roy Lammons Post No. 7 of American Legion, reported, interested in establishing airport.

**Mo., St. Louis** — Dunham Construction Co., Chemical Bldg., low bidder at \$63,404 for construction of hangar, with ground dimensions of 100x160 ft., at Municipal Airport for Thirty-fifth Division of National Guard; Rethwilm-Garland Plumbing Co., 1053 Big Bend St., for plumbing; Leahy Heating and Ventilating Co., for ventilating; Sunlight Electric Co., 2735 N. Union St., for lighting. 6-5

**Tex., Lubbock** — City Comsn., J. J. Clements, Mayor, received low bid at \$22,803 from W G. McMillan for hangar at municipal airport.

**Tex., San Antonio** — City, Wayne Parks, Mgr., expend \$12,000 for improvements at Winburn Field.

**Tex., Schertz**, Randolph Field—Office of Constructing Q. M. receives bids July 28 for hangars. See Want Section—Bids Asked.

**Va., Harrisonburg** — Massanutten Airways, Inc., capital \$25,000, incorporated; C. D. Shank.

**W. Va., Huntington** — Chamber of Commerce Transportation Committee, Roy L. Pixler, Chmn., interested in organizing holding company to lease site of Huntington airport at South Point.

## Bridges, Culverts and Viaducts

### Proposed Construction

**Ala., Gadsden** — U. S. Senate passed bill granting permission to Etowah County to erect traffic bridge across Coosa River at Gilbert Ferry, south of Gadsden, cost about \$150,000; House of Representatives previously passed bill. 8-15-1929

**D. C., Washington** — Arlington Memorial Bridge Comsn., Col. U. S. Grant, 3rd, Executive and Disbursing Officer, Navy Bldg., receives bids July 30 for fenders for bascule span of Arlington Memorial Bridge.

**Fla., Sebring** — State Road Dept., Tallahassee, plans bridge over Letta Creek on Avon-Sebring road, Highlands County; B. M. Duncan, State Highway Engr.

**Ga., La Fayette** — See Roads, Streets, Paving.

**Kentucky** — State Highway Comsn. receives bids for 3 bridges. See Roads, Streets, Paving.

**Ky., Maysville** — War Dept., Washington, authorized permit to State Highway Comsn., Frankfort, for bridge over Ohio River at Maysville.

**La., Bastrop** — War Dept., Washington, approved application of Morehouse Parish Police Jury, J. W. Brodnax, Pres., for 4 bridges across Bayou Bartholomew, Louisiana: At Bonner's Ferry, 4 mi. north of Bastrop; Cory Bluffs, 15 mi. northeast of Bastrop; Knox Ferry, 12 mi. northeast of Bastrop; Parker's Ferry, 3.5 mi. north of Bastrop; J. Lester White, Parish Engr. 6-12

**Maryland** — State Roads Comsn., Baltimore, received low bids for 3 bridges: Queen Anne's County—timber bridge, exclusive of draw span, on road from Love Point to Queenstown, over Kent Narrows, Mullan Contracting Co., 3904 Greenmount Ave., Baltimore, at \$53,308; Harford County—substructure for proposed bridge on Harmony Creek to Darlington road, over Deer Creek, Forbes-Murphy Construction Co., 406 St. Paul St., Baltimore, \$17,872; from American Bridge Co., 30 Church St., New York, at \$15,706, for superstructure, Montgomery County—triple span steel and conc. bridge over tracks of B. & O. R. R. Co., at Kensington, Ligon & Ligon, 3310 Ridgewood Ave., Baltimore, at \$20,764; Harry D. Wilhier, Jr., Ch. Engr. 6-19

**Md., Love Point** — State Roads Comsn., G. Clinton Uhl, Chmn., Baltimore, receives bids July 29 for single leaf bascule span superstructure (Queen Anne's County, Contract No. Q-63-28); overhead counterweight type, clear channel 50 ft., clear roadway; located at Kent Island Narrows, on road from Queenstown to Love Point.

**Mo., Kansas City** — State Highway Comsn., Jefferson City, preparing plans for 2 viaducts on U. S. Highway No. 40; 500-ft. viaduct across railroad tracks; 400-ft. viaduct across Blue River; considering viaduct over Raytown road: T. H. Cutler, Ch. Engr.

**Mo., St. Louis** — City, Bd. of Public Service, plans Clark Ave. viaduct over tracks at Union Station, from Sixteenth St. to Twenty-first St.; W. W. Horner, City Engr.

**Mo., St. Louis** — Board of Aldermen approved ordinance authorizing construction of five approaches to Municipal Bridge; cost \$3,250,000.

**Mo., St. Louis** — Bd. of Public Service, Room 304 City Hall, receives bids July 15 for bridges over tracks of Wabash Railway Co. at Lindell and Union Blvd., New Grand Drive and footpath in Forest Park; also for improving McLaran Ave. from Church Road to west line of Oxford Lane. 5-29

**North Carolina** — State Highway Comsn. receives bids for 2 bridges. See Roads, Streets, Paving.

**Ola., Oklahoma City** — See Roads, Streets, Paving.

**Tenn., Clarksville** — Dept. of Highways and Public Works, Nashville, applied for permit to erect fixed steel highway bridge across Red River, downstream from Louisville & Nashville Bridge, Clarksville; plans provide horizontal opening of about 135 ft.; vertical clearance, 53 ft. above low backwater of pool C. from Cumberland River, and 5 ft. above extreme high water; concents approach to main river span.

**Texas—Oklahoma** — State Highway Comsn., of Texas, Austin, and of Oklahoma, Oklahoma City, plan letting contracts soon for 2 free bridges across Red River: Between Quanah, Texas, and Eldorado, Okla.; between Vernon, Tex., and Elmer, Okla.; Gibb Gilchrist, State Highway Engr., Austin; A. R. Losh, State Highway Engr., Oklahoma City.

**Tex., Dallas** — See Roads, Streets, Paving.

**Tex., Dallas** — Chicago, Rock Island & Gulf R. R., W. H. Petersen, Ch. Engr. Chicago, Ill., will build smaller underpasses on new Cadiz St. river bottom crossing of tracks west of Union Terminal tracks.

**Tex., Houston** — Harris County, Norman Atkinson, County Judge, received low bids from Don Hall Construction Co., Union Natl. Bank Bldg., at \$38,518, for 577-ft. conc. bridge over Goose Creek on Baytown-Pelly-Goose Creek Highway; 24-ft. roadway; Chas. R. Haile, County Engr. 6-19

**Tex., Houston** — See Roads, Streets, Paving.

**Virginia** — State Highway Comsn. receives bids for 4 bridges. See Roads, Streets, Paving.

**Tex., Howe** — Grayson County, Joe Wilson, Asst. County Engr., plans 60-ft. steel overpass on Highway No. 6, Howe.

**Tex., Rockland** — State Highway Comsn., Austin, plans bridge across Neches River at Rockland, Tyler County; G. C. Wickline, State Bridge Engr.

**Tex., San Antonio** — City, C. M. Chambers, Mayor, drawing plans for \$30,000 bridge, Martinez St. and San Antonio River; rein. conc. and steel, single span; Baretta-Stiles Co., Inc., Engrs., Natl' Bank of Commerce Bldg.; Paul Steer, Street Commr. 4-10

**Tex., Texarkana** — City, L. S. Kennedy, Mayor, plans underpass at Seventh St. crossing of Kansas City, Southern Ry.; K. V. Harris, City Engr., preparing plans.

### Contracts Awarded

**Md., Frederick** — American Bridge Co., 30 Church St., New York, has contract, at about \$50,000, for bridge over Monocacy River at Frederick Junction; work started. 6-26

**Tex.**, Corpus Christi — Nueces County Comrs. Court let contract to Cage Construction Co., Corpus Christi, for 10 bridges, totaling 1,700 lin. ft. creosoted timber, on Flour Bluff road; Calvin E. Cocke, County Engr. 6-12

**Tex.**, Gainesville—State Highway Comsn., Austin, let contract to Missouri Valley Bridge & Iron Co., Leavenworth, Kansas, at \$320,817, for steel and conc. free bridge across Red River between Gainesville, Tex., and Marietta, Okla., on U. S. Highway No. 77; seven 210-ft. spans, two 36-ft. I beam spans; 22-ft. roadway; awaiting approval of Oklahoma Highway Comsn. 4-3

### Canning and Packing Plants

**Fla.**, Lake Placid—Lake Placid Citrus Growers' Assn., Wm. Vogt, Bd. of Managers, plans \$70,000 packing plant south of Atlantic Coast Line depot; season capacity of 200,000 boxes.

**Fla.**, Palmetto—B. C. Skinner of Florida Citrus Machinery Co., Dunedin, reported, install machinery and other equipment at Courtney citrus packing plant.

**Mo.**, Springfield—Ozark Mountain Canning Co., incorporated; Ashley Mixon, 1612 Mount Vernon St.

**S. C.**, Columbia—A. G. Smith, Edmund, and E. C. Wingard, Pellon, and associates have canning plant under construction in Pellon section of Lexington County; capacity 20,000 cans daily.

### Clayworking Plants

**Md.**, Frostburg—North American Refractories Co., National City Bldg., Cleveland, O., reported, acquired Savage Mountain Fire Brick Co., at Frostburg, main office of company, 641 Oliver Bldg., Pittsburgh, Pa.

### Cotton Compresses and Gins

**Miss.**, Jackson—Mississippi Ginning & Mfg. Co., George Williamson, Pres., 2302 Cherry St., Vicksburg, reported, acquired holdings of Hiawatha Milling Co.

**Mo.**, Marston — Richardson, DeLisle & Pinkley Gin Co., capital \$54,000, incorporated; Walter Richardson and T. C. Pinkley, Portageville.

**Okla.**, Strong City—Farmers Union Cooperative Gin, capital \$25,000, incorporated; J. J. Wilson, Crawford; Leon Young, Strong City.

**Okla.**, Webbers Falls—Cherokee Cotton Oil Co., reported, granted permission by State Corporation Comsn., Oklahoma City, to remove cotton gin from Caney to here.

**Tex.**, Houston—W. J. McKenzie, 7815 E. St., reported, has contract for \$25,000 warehouse near Clinton for Exporters Compress and Warehouse Co.; 1 story; brick with steel frame; 386x64 ft.

### Drainage, Dredging and Irrigation

**Ala.**, Huntsville—City Council call special election to provide funds for financing drainage of bottom lands.

**Fla.**, Delray—U. S. Engr. Office, Jacksonville, receives bids July 12 for lease and operation of dredging plant in Intracoastal Waterway in vicinity of Boynton and Delray; information on application.

**Maryland**—U. S. Engr. Office, 300 Custom House, Baltimore, receives bids Aug. 5 for dredging approximately 1,174,341 cu. yds. material to minimum depth of 37 ft. over width of 350 ft. in cut-off and a part of Brewerton section of channel to Baltimore.

**Tex.**, Houston—See Miscellaneous Construction.

**Tex.**, Laredo—Col. F. S. Robertson, San Benito, placed before local business men a proposal for a power and irrigation project, involving construction of 10 impounding dams across Rio Grande, two to be in Webb County, near Laredo.

**Tex.**, Mercedes—Owen Combe has permission from State Bd. of Water Engineers, Austin, to make survey for irrigation project in northern Cameron and southern Willacy Counties; reservoir to cover 3000 acres and to irrigate 150,000 acres; pump and reservoir to be located on Rio Grande near Mercedes.

### Electric Light and Power

**Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.**

**Alabama**—Alabama Power Co., Birmingham, applied to Public Service Comsn.,

Montgomery, for certificate of public convenience and necessity to construct electric transmission line from Chickasaw in Mobile County, to Citronelle, distance of 35 miles, together with substations; company has franchise for distribution and electric light and power service in city of Citronelle from hydro electric system.

**Ala.**, Headland—Alabama Public Service Co., approved sale of municipal electric plant and water works plant at Headland to Alabama Power Co., Birmingham; Alabama Water Service Co. to assume obligations of water works plant.

**Ark.**, West Memphis—West Memphis Power and Water Co., capital \$100,000, incorporated; Charles E. Sullenger, Ossola; Wilbur E. Brownbach, 6330 Southwood St., St. Louis, Mo.; furnish water and power for West Memphis; later may extend operations to other towns; will begin construction at once on 1800 ft. artesian well with 100,000 gal. tank and storage reservoir for water system and modern equipped power plant.

**Fla.**, Miami Beach—Wagner Electric Co., 340 W. Flagler St., Miami, reported, low bidder for white way project, Biscayne St.

**Ga.**, Hawkinsville—Georgia Power Co., Atlanta, reported, acquired electric light and distribution system.

**Kentucky**—Kentucky Utilities Co., Inc., Louisville, Kentucky Power & Light Co., and Old Dominion Power Co., approved expenditure of \$161,378 for expansions and improvements in service facilities; work to begin at once; replace hand fired boiler unit and accessory equipment at Maysville generating station with water tube boiler and multiple retort stoker, enlarge boiler room, estimated cost \$60,000; build 8 miles of 33,000 volt transmission line from Pineville generating station to Anchor, Ky., to supply electric service of 930 h. p. connected load to Anchor Block Coal Co. and Knox-Jellico Mining Co., for operation of mine equipment; erect 600 kv-a substation at Anchor; power line will form section of proposed transmission line connecting Pineville plant with city of Williamsburg; cost \$56,500; expend \$7400 for repairs at Shebyville; build 6 miles of 33,000 volt transmission line between Morganfield and Uniontown, cost \$5500; repair Winchester-Mt. Sterling 33,000 volt transmission line; build 2300 volt line between Earlington and Mortons Gap to serve 15 villages; rebuild 33,000 volt line from Tejay to Varilla, 33,000 volt line from Central City to Shogog crossing, 2300 volt line from Corbin switching station to Woodbine; extensive repairs will be made to lines connecting Elizabethtown and Camp Knox, Upton, Hodgenville, and to the 66,000 volt double circuit steel tower line connecting the Pocket, Va. generating station and Big Stone Gap, Va.; make additions to 66,000 volt transmission line crossing Ohio River at Wabash Island, near Morganfield; build 23,000 volt line near Pinesville to Clear Creek Mountain Springs, to serve 41 rural customers; build 3½ miles 33,000 volt line near Greenville. 3-13

**La.**, Shreveport—Southwest L. E. Myers Co., Allen Bldg., Dallas, Tex., reported, has contract at \$50,000 for spray pond extension at plant of Southwestern Gas & Electric Co. 1-30

**Miss.**, Prentiss—Town will let contract within 30 to 60 days for 120 h.p. oil engine, (complete electric unit); L. M. Williams, Town Clk. See Want Section—Machinery and Supplies.

**Mo.**, Farmington—Reynolds Electric Co., reported, has contract for installation white way system.

**Mo.**, Kansas City—Kansas City Power & Light Co., 1330 Grand St., reported, receiving bids for general contract for \$10,000 substation Forty-seventh & Mill Creek; O. R. Betts, Engr., 1330 Grand St. 1-30

**N. C.**, Forest City—City, reported, sold electric light and water plant to Southern Public Utilities Co., 432 S. Church St., Charlotte, subject to ratification by people. 7-3

**N. C.**, Morehead City—City, K. P. B. Bonner, Mayor, receives bids July 29 for purchase of electric and water systems now owned and operated by city; information from Utilities Engineering & Management Corp., 917 Johnston Bldg., Charlotte.

**N. C.**, Raleigh—North Carolina Utilities Co., incorporated; Thos. Creekmore, Lawyers Bldg.

**N. C.**, Spindale—City, reported, sold electric light and power plant to Southern Public Utilities Co., 432 S. Church St., Charlotte, subject to ratification by people. 7-3

**Okla.**, Oklahoma City—J. B. Klein Iron & Foundry Co., 1004 W. Second St., reported, has contracted for 500 tons fab. struc. steel for service building for Oklahoma Gas &

Electric Co., through Bylesby Engineering & Management Corp., 231 S. LaSalle St., Chicago, Ill. 7-3

**Okla.**, Oklahoma City—Citizens Public Service Co., capital \$100,000, incorporated; O. A. Losee, 2125 W. Nineteenth St.

**Texas**—Central Power and Light Co., San Antonio, reported, considering hydro-electric plant at Lake Lovenskiold on Nueces River; cost \$750,000.

**Texas**—Texas Power and Light Co., Dallas, reported, plans expansion of facilities to accommodate increased demand for electric service, including transmission lines and substation construction one of which will be 100 miles of 132,000 volt line to large part of South Central Texas, beginning at Trinidad generating station and extend by way of Jewett Normangee area to Rockdale Camero vicinity; a 60,000 volt line will soon be started from Waco to McGregor; four line will serve pipe line pumping stations on line from Van to Gulf of Mexico. 6-19

**Tex.**, Galveston—Galveston Electric Co., reported, expend \$90,000, for improvements to plant at Twenty-sixth St. and Ave. E; install synchronous condenser, system of underground wires, etc.

**Va.**, Richmond—W. E. Wood, Chrm. Bd. of Virginia Electric and Power Co., a constituent company of Engineers Public Service Co., Inc., 120 Broadway, New York, announced that merger of City Gas Co. of Norfolk into Virginia Electric & Power Co., was completed and approved by Virginia Comms.; this follows stockholders action approving merger on June 30 and directors action taking further necessary steps July; changes in stock as follows: for 7500 shares City Gas of Norfolk, 8% preferred, there will be issued 10,000 shares of new \$6 dividend preferred stock; for 102,892 shares of Virginia Electric & Power Co. 7% preferred will be issued 120,041 shares of new \$6 dividend preferred stock; for 64,817 shares of Virginia Electric and Power Co. 6% preferred will be issued 64,817 shares of new \$6 dividend preferred stock and for 557,719 shares of Virginia Electric & Power Co. common stock, will issue 2,788,445 shares of new common stock. 6-26

**Va.**, Waynesboro—Virginia Public Service Co., Charlottesville, reported, negotiating for power plant. 5-1

### Fertilizer Plants

**Fla.**, Georgetown—Georgetown Co. incorporated; G. A. Jeffries, C. S. Green.

**Md.**, Baltimore—Oberphos Company formed for purpose of using and exploiting certain improved processes for manufacture of fertilizers and superphosphates; Bd. of Directors, include H. B. Rast, Howard Bruce, 200 Scott St., and Gus. Ober; Gustave Ober, Jr., 110 E. Lombard St., will be president; authorized capital of company consists of 16,000 shares of which 6000 shares of \$100 par value and aggregate par of \$600,000 will be 6%, cumulative preferred stock and 10,000 shares without par value will be common stock; substantial interest in company reported taken by G. Ober & Sons Co., Koppers Co., Koppers Bldg., Pittsburgh, Pa., through Bartlett Hayward Co., 200 Scott St., a related company.

### Flour, Feed and Meal Mills

**Tex.**, Sherman—Grace Milling Co. increased capital, \$40,000 to \$125,000.

### Foundry and Machine Plants

**Oka.**, Oklahoma City—Sherman Machine & Iron Co., 18 E. Main St., acquired 250-ft. tract west of fair grounds, extending from Eighth to Ninth St.; provides about 70,000 sq. ft. for foundry purposes.

### Garages and Filling Stations

**Ark.**, Little Rock—Bale Chevrolet Co., 411 W. Capitol St., soon receive bids for 1 story and basement, rein. conc. garage, warehouse and service bldg. Second St. and Broadway; cost \$100,000; Wittenberg & Deloney, Archts., 807 Home Life Bldg. 6-19

**Ark.**, Little Rock—Baker Oil Co., W. W. Baker, Mgr., 112 E. Seventh St., N. Little Rock, erecting garage and service station, Third and Maple Sts.; \$12,000.

**Fla.**, Jacksonville—Auto Parts Co., 129 Clay St., reported, let contract to G. W. Hessler, Inc. 111 W. Ashley St., for building S. W. Cor. Clay and Duval Sts.; 2 story; cost \$17,000; Mark & Sheftall, Archts., 216 Clark Bldg.

**Fla.**, Miami—Sinclair Refining Co., 173 N. W. Walton St., Atlanta, Ga., erect filling station, 34 S. W. Second Ave.; owner builds; day labor.

Ga., Atlanta—Dobbs Tire Co., 222 Spring St., let contract to A. K. Adams Co., 542 Plum St., N. W., for service station in West End, and for station, W. Peachtree and Alexander St., N. W., both conc. area-ways, brick, comp. roof, struc. steel; private plans. 7-3

Ga., Atlanta—Standard Oil Co., J. C. Pittman, Engr., 704 Marietta St., N. W., opens bids July 10 for garage, blacksmith shop and vat room, Bankhead Ave., N. W.; garage, 1 story, 134x60 ft.; blacksmith shop, 1 story, 100x60 ft.; struc. steel frames, rein. conc. foundation, brick, steel sash, overhead doors, asphalt and metal roof; \$125,000; following estimating on general contract; Pittman Construction Co., Rhodes Bldg.; Flagler Co., Red Rock Bldg.; Griffin Construction Co., 452 Spring St., N. W.; Chas. McConnell, 1331 Greenwich Ave.; plans by owners engineering department, Louisville, Ky. 7-3

Md., Baltimore—Stewart & Co., Howard & Lexington Sts., having revised plans prepared by Joseph Evans Sperry, Calvert Bldg., for \$200,000 warehouse and 40-car garage, 641 W. Saratoga St.; will call for bids in about 3 weeks. 4-24

Mo., Independence—L. A. Smith erect service station Lexington and Union Sts.

Mo., Jefferson City—State Highway Coms., receives bids July 21 for constructing headquarters garage and record storage building at Jefferson City; T. H. Cutler, Ch. Engr. 5-29

Mo., Kansas City—Cities Service Oil Co., Elmhurst Bldg., reported, plan service and oil station S. W. Cor. Fifteenth and Olive St.

Mo., St. Louis—W. E. and E. F. May, 5974 Southwest, reported, let contract to J. A. Prahl Contg. and Bldg. Co., 5521 Grand St., for 1 and 2 story auto sales and service Bldg., 50x60 ft., at 5970 Southwest. 6-19

Mo., St. Louis—Arnall Service Garage, incorporated; J. H. Arnall, 5675 Waterman St.

Mo., St. Louis—Shamrock Gas & Oil Co., W. Grossheider, Secy., 4158 Geraldine St., will receive new bids about Sept. for \$22,000 filling station, garage and warehouse; 2 story, brick; Edward J. Gieseer, Archt., De Menil Bldg.

Mo., Warrensburg—Hunt, Gokay & Dorrane, Inc., capital \$25,000, chartered; Frank Golay, Warrensburg; Luther Hunt, Clinton.

N. C., Charlotte—Power Brake Co., incorporated; C. A. Cochran, Law Bldg.; automobiles, motorcycles, etc.

Okl., Oklahoma City—J. A. Werner Steel & Iron Works, 510 N. Indiana St., Oklahoma City, reported, has contract for garage for Packard Motor Co., Joe Eisle, 201 W. Tenth St.; brick, steel and conc., 2 story, 95x190 ft.; cost about \$100,000; Joe I. Davis, Archt., First Natl. Bank Bldg. 5-22

Okl., Waynoka—J. W. Wilson Const. Co., Maud, reported, has contract for sales garage for J. Wagner; Pierce Plumbing Co. for plumbing; Bud Hinks, for electric wiring.

Tenn., Morristown—Hamblen County Motor Co., Henry Bales, Pres., reported, rebuild burned auto plant.

Tex., Baytown—The Texas Co., San Jacinto St., Houston, acquired 1-acre site for filling station between Goose Creek and Polly Highway.

Tex., Cotulla—Humble Oil Co., Humble Bldg., Houston, has permit for filling station, Broadway and Main Sts.

Tex., Dallas—Mrs. W. S. Keating, 4607 Travis St., erect brick garage.

Tex., Fort Worth—Hall Hadley has permit for \$20,000 service station, Camp Bowie Blvd. and Virginia Pl.

Tex., Harrisburg, Sta. Houston—S. J. Helton, president of Ranger Oil Co., 1201 Milby St., purchased 15,000 sq ft. site, Broadway; use for service station at present.

Tex., Houston—Gulf Refining Co., Frick Annex, Pittsburgh, Pa., reported, erect filling station near Clinton Drive.

Va., Bristol—Lowe Construction Co. has under construction repair work on building of State Motor Co., Shelby St.; cost \$20,000.

Va., Lynchburg—Corporation being formed to erect 16-story Allied Arts Bldg. and adjoining 100-car garage, Eighth and Church Sts.; Stanhope S. Johnson and R. O. Branham, Peoples Natl. Bank Bldg., Archts.; C. W. Hancock & Sons, Contrs., Krise Bldg. See Building News, Contracts Awarded—Bank and Office. 5-29

Va., Lynchburg—Shell Eastern Petroleum Products, Inc., Court Square Bldg., Baltimore, Md., erecting filling station.

Va., Norfolk—Peter Holland Motor Corp., capital \$25,000, incorporated; Ralph E. Cruser, Lynn Haven.

Va., Richmond—Plans for Harvey System Service Station, Ninth and Cary Sts., soon be ready for bids; Lee, Smith & Van Dervoort, Archts., Sixth and Franklin Sts.

Va., Roanoke—Enfield Buick Co., Charles E. Enfield, Pres., erect \$35,000 garage building, N. W. Cor. Patterson Ave. and Seventh St.; rein. conc. fireproof, 165 ft. on Seventh St., with L addition 50x50 ft. on N. W. corner; second floor will contain offices, storage space, etc.; excavation to begin at once by Eubank & Caldwell, Boxley Bldg., Roanoke. Contrs. 4-24

### Gas and Oil Enterprises

Ga., Atlanta—United Construction Co., 685 Georgia Savings Bank Bldg., reported, has contract for governor building at Rhodes St. and Railroad for Atlanta Gas Light Co., Peachtree & Harris Sts., N. E.; 1 story, brick and steel. 1-16

Ky., Central City—G. and M. Oil Co. incorporated; Herman Gill, N. A. Malin.

Ky., Olive Hill—Grassy Oil and Gas Co. incorporated; G. W. Stamper, R. T. Kennard.

La., Houma—Houma Oil Co., Inc., capital \$15,000, incorporated; A. P. Breaux, Sr. Lockport; R. C. Troup, Houma.

La., Kentwood—Robert S. Phifer, and M. L. Culley, Standard Rite Bldg., Jackson, Miss., reported, granted gas franchise. 6-19

La., Opelousas—United Gas Co., 1601 Commerce St., Houston, Tex., applied for gas franchise; proposes to expend \$6,000,000 for gas if franchises in 44 cities are granted.

La., Sicily Island—Sicily Island Gas Co., Inc., W. S. Beck, Pres., install gas system; G. E. Walker, Contr., Natchez, Miss. 6-26

La., Vinton—Corbat Oil Co., Inc., capital \$100,000, chartered; G. D. Baton, Beaumont, Tex.; E. H. Lyons, Vinton.

Miss., Collins—Southern Natural Gas Corp., Birmingham, Ala., completed survey through Covington County for gas line.

Mississippi—M. B. Higman, Ch. Engr., Memphis Natural Gas Co., Memphis, Tenn., announced construction work will commence shortly on 50 mile pipe line to interlink company's main pipe line with towns of Leland, Indianola, Morehead, Itabena and Greenwood, Miss., with the possibility of a additional 50 mile extension, to be constructed at later date, to hook up towns of Carrollton, Winona, Grenada and Charleston, Miss.; surveys for first 50 mile line now being carried on and acquisition of rights of way expected to start at early date; Memphis Natural Gas Co., in co-operation with Mississippi Power and Light Co., Jackson, has recently completed preliminary plans and specifications, together with complete market survey of new territory to be supplied with natural gas; new line will tap company's 18-in. high pressure line near Greenville, Miss. 3-27

Miss., Meridian—City, reported, voted negatively on proposal, Robt. S. Phifer, 145 Battle Hill Place, and M. L. Culley, Standard Life Bldg., Jackson, for gas franchise.

Mo., Milan—Milan Home Oil Co., incorporated; N. A. Mayman, W. H. Newman.

Mo., Springfield—Southern Union Gas Co., Chicago, Ill., Cities Service Co., 60 Wall St., New York and Ozark Plateau Gas Co., applied for natural gas franchise; hearing on Feb. 17.

Mo., Springfield—Gypsy Oil and Gulf Pipe-line Co., Tulsa, Okla., reported, plans pipe line through Ozarks; investigating right of way in Stone and Christian counties; plans constructing line through northwest corner of Stone county and across Christian county and enter Illinois about 30 miles south of St. Louis, 1,100 miles long; carry crude oil from Oklahoma and Texas fields to industrial centers of eastern central section of country.

Oklahoma—Ajax Pipe Line Co., Wilhoit Bldg., Springfield, Mo., advises two 10-in. welded pipe lines are being constructed starting at Glenn Pool, Okla., and terminating at Wood River, Ill.; Oklahoma Contracting Co., Allen Bldg., Dallas, Tex., are contractors; Ajax Pipe Line Co. will construct 9 pumping stations, located at intervals of 45 miles. 6-26

Okl., Muskogee—City votes July 29 on granting franchise to Oklahoma Natural Gas Co., Tulsa.

Tex., Amarillo—Paul-Tex Oil Co., capital \$30,000, incorporated; W. E. Oliver, 1200 Taylor St.

Tex., Fort Worth—Williamson County Pipe Line Co., capital \$120,000, incorporated; W. L. Stewart, Electric Bldg.

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Tex., Fort Worth—City, reported, tentatively accepted proposal of Arthur M. Lampert, Inc., 44 Pine St., New York, for constructing 18-in. pipe line to supply city with natural gas; contract calls for taking over all gas distribution systems in city; cost of pipe line \$10,000,000, to be secured by municipal revenue bonds; people to vote on ratification. 6-12

### Ice and Cold-Storage Plants

Ark., Texarkana—J. R. Greenwood of Greenwood Realty Co., erect ice & cold storage plant on W. Seventh St. between Nettie and Bowie Sts.; vit. brick, 40x80 ft., fireproof; equipped with 10 ton manufacturing unit with room for additional 10-ton unit; install carbon dioxide or dry ice machine; later plan erection of ice cream plant in conjunction with milk products plant.

Florida—City Ice and Fuel Co., 6611 Euclid Ave., Cleveland, O., Robt. C. Suhr, V. P., in charge of operations, closed transaction acquiring 15 ice producing plants in southeast Florida; plants include New Electric Ice Co., 2637 N. Miami Ave.; Peninsular Ice Co., 645 N. W. 13th St., Service Ice Co., 1022 N. W. 24th Ave., etc., all Miami; City Ice and Fuel Co.; will maintain southeast Florida headquarters at 2637 N. Miami Ave., Miami. 5-15

La., Morgan City—Peoples Ice & Cold Storage, Inc., capital \$75,000, incorporated; C. Russell Brownlee.

### Land Development

Fla., DeLand—Theodore Strawn, Inc., chartered; C. K. and R. R. Strawn.

Fla., Gainesville—Price Farms, Inc., chartered; J. T. and J. C. Price.

Fla., Miami—Tropical Avocado Groves, Inc., 916 Ingraham Bldg., has 500 acres, developing 100 acres in Redland District, Dade County, for avocado groves; expend approximately \$100,000 within 5 yrs.; corporation is successor to W. K. Walton Avocado Groves, Inc. 7-3

Fla., Orlando—Southern Commercial Corp., capital \$250,000, incorporated; John S. Horst, 127 N. Thornton St.

Fla., Tampa—C. H. Oldsen, 6600 Greenwood St., Chicago, Ill., reported, acquired Belmar tract in interbay section, south of Tampa; will develop.

Fla., Tampa—Arthur Kessler, Inc., chartered; W. Davis, 5801 Central Ave.

Fla., West Palm Beach—B. C. D. Holding Co., Inc., chartered; E. B. Davis, 216 Valencia Road.

Ky., Louisville—Daniel Wagner Realty Co., capital \$300,000, incorporated; Daniel Wagner, 1275 Everett St.

La., Lake Charles—Calcasieu Real Estate & Oil Co., Inc., chartered; S. A. Knapp, 527 Madison St.

La., Lake Charles—Allen Co., Inc., capital \$53,000, incorporated; Paul Zimmerman, 1805 Madison St.

La., Lake Charles—Calcasieu, Inc., chartered; Paul Zimmerman, 1805 Madison St.

La., New Orleans—Donnax Realty Co., Inc., capital \$20,000, incorporated; Nathan H. Feitel, 2034 Broadway.

La., New Orleans—Evangeline Land and Mineral Co., Inc., capital \$85,000, incorporated; Jas. L. Wesche, 2238 Esplanade Ave.

Mo., Clayton—Widgeon Club, Inc., chartered; August E. Brooker, L. G. Straley.

Mo., Kansas City—Perma-Green Co., incorporated; B. P. Murphy, Interstate Bldg.

Mo., St. Louis—West-Cates Co., incorporated; J. G. McKelvey, 1308 International Office Bldg.

N. C., Asheville—Triad Investment Co., capital \$100,000, incorporated; H. C. Jarvis, 37 Monroe Place.

N. C., Southern Pines—Herr & Co., Inc., capital \$50,000, incorporated; George G. Herr, R. F. Potts.

Okla., Tulsa—Park Bd., reported, approved purchase and development 30 acres Forty-first St. and Jenkins Rd. for park; also improvements to other parks and playgrounds.

Tenn., Chattanooga—City develop property in North Chattanooga for recreation.

Tex., Austin—Majestic Realty Co., capital \$50,000, incorporated; W. Selden Reed, Norwood Bldg.

Tex., Dallas—Tru Putt Golf Course incorporated; R. W. Jackson, Southwestern Life Bldg.

Tex., Coleman—W. C. Gillen acquired 27,000 acre ranch in Travis and Burnet counties.

Tex., San Antonio—Compton Investment Co., Majestic Bldg., develop subdivision on North Lopp and Jones Maltberger Rd.

Tex., Sherman—T. D. H. Moore develop miniature golf course, 400 S. Travis St.

Va., Alexandria—Ramsgate Land Co., Inc., chartered; Edmond C. Fletcher, The Ritz, Washington, D. C.

### Lumber Enterprises

Fla., Jacksonville—Archie W. Budd, 25th and Hunting Park St., Philadelphia, Pa., reported, acquired 14,000 acres southwest of Middleburg, Clay County, for forest project.

Ky., Louisville—C. W. Buckley Lumber Co., capital \$90,000, incorporated; H. W. Batson, Marion E. Taylor Bldg.

S. C., Greenwood—Greenwood Lumber Co., capital \$75,000, incorporated; E. W. Milford.

Va., Richmond—Woodward & Son, Inc., capital \$200,000, chartered; Stewart M. Woodward, 3510 W. Broad St.

### Mining

N. C., Burnsville—Yancey Cyanite Co. incorporated; J. A. Pollard, Burnsville; G. H. Wright, Asheville.

### Miscellaneous Construction

Ala., Mobile—Alabama State Docks Comsn. opens bids July 14 for furnishing and constructing transit shed along south side of Pier "C"; 120x1180 ft., struc. steel frame, corrugated sheet metal roof and sides, rolling steel doors, conc. floor, shed columns to be supported on timber piles capped with conc.

Ark., Little Rock—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, soon let contract for subway under Missouri Pacific tracks at Third and Poplar Sts.; \$90,000.

Ark., Stuttgart—Hoevels Elevator & Storage Co., incorporated; J. C. Robbins, C. J. Brain; construct warehouse and elevator for rice and warehouse for cotton; rice elevator to have capacity of 206,000 bu. equipped with drying and cleaning plant; cost \$100,000; cotton warehouse to have capacity of 200 bales, cost \$20,000; buildings will probably be built at different locations.

Fla., Okeechobee—Arundel Corp., Pier 2 Pratt St., Baltimore, Md., has contract for immediate repair of dikes along south shore of Lake Okeechobee, cost about \$40,000; Senator A. W. Young, Sec'y. Everglades Drainage and Flood Control Bd. 7-3

Ky., Hickman—Woods Brothers Construction Co., Security Bldg., Kansas City, Mo., has contract for constructing dike in chute of Island No. 8, below Hickman; contract includes placing 5000 ft. of piling toward upper end of chute; dike is planned to protect Reelfoot levee; McCall Co., Pine Bluff, Ark., has contract for 5000 ft. of dike piling in chute of Island No. 6. 3-20

La., Shreveport—City, L. E. Thomas, Mayor, advises regarding construction of 3-row pile dike, St. Louis-Southwestern Ry. Co., W. S. Hanley, Ch. Engr., Tyler, Tex., contemplated this work for protection of tracks below city; has decided to postpone construction. 7-3

Missouri—U. S. Engr. Office, Customhouse, St. Louis, opens bids July 23 for placing about 26,000 cu. yd. earth work in repairing levee of St. Genevieve Levee Dist. No. 1, St. Genevieve County.

Missouri—U. S. Engr. Office, McCall Bldg., Memphis, Tenn., reported, received low bid at \$385 for job No. 3 constructing about 48,000 cu. yds. of earthwork in St. Francis Drainage Dist. of Clay and Green Counties, Ark., and Drainage Dist. No. 25 of Dunklin County, Missouri, from Bunnell & Mack, Paragould, Ark., and at .51 for job No. 2, 6500 cu. yds. earthwork. 6-12

Mo., Kansas City—Company of which J. F. Eubank is president and Herston William, vice president, started excavating for \$400,000 mausoleum, Forest Hill Cemetery; facade 218 ft., depth 64 ft., central dome of golden-colored ceramic tile; limestone exterior; interior finish marble; 600 crypts; 20 private family rooms; chapel beneath dome.

Tex., Houston—Following are contractors on extension to Public Grain Elevator for Port of Houston, B. C. Allin, Director of Port, and Charles Crotty, Assistant, being constructed by Folwell Engineering Co., 333 N. Michigan Ave., Chicago, Gen. Contrs., and on which gallery extension is completed; struc. steel placed and conc. floor and roof poured; concrete poured on first storage unit of 737,000 bushels; concrete poured for base-ments of warehouse and track sheds; pouring for remaining storage unit; first unit to be ready to operate July 15; second unit

Aug. 15; entire project Nov. 1 to 15; John S. Metcalf Co., 111 W. Jackson Blvd., Chicago, Ill., resigning and supervising engineers; subcontractors are: Struc. steel, Houston Structural Steel Co., 3910 Washington St.; excavation, C. K. Horton, 2707 Clay St.; electrical work, A. T. Vick & Co., Electric Bldg.; roofing and flashing, Lone Star Roofing Co., Pine and Baker Sts.; asbestos siding, Eternit, Inc., 1708 Main St., all Houston; machinery, Webster Manufacturing Co., 856 N. Kostner St., Chicago, Ill.; conc. piles, E. A. Whitney & Son, City Bank Bldg., Kansas City, Mo.; Portland cement, Universal Atlas Cement Company, 1202 Amicable Bldg., Waco, Lone Star Cement Co., Post-Dispatch Bldg., and Trinity Portland Cement Co., 3515 Navigation St., Houston; rein. steel, Peden Co., 700 N. San Jacinto St., 6-19

Tex., Houston—Harris County Drainage Dist. No. 2, H. L. Washburn, County Auditor, Courthouse, opens bids July 19 for bulkhead.

Tex., Port Arthur—City Comsn. let contract to W. Horace Williams Co., 833 Howard Ave., New Orleans, La., at \$216,124.59 for driving steel sheet piling for sea wall; start driving piles about July 15; contract includes unloading steel, furnishing all material for driving steel, installing anchor rods, conc. anchor walls, creosoted tender system pipes, walling and shell and earth filling. 6-19

### Miscellaneous Enterprises

Ark., Pine Bluff—Taylor & Co., 123 W. Barr St., reported, acquired R. H. Mills & Sons Insurance Co., 203 1/2 W. Fifth St.

D. C., Washington—Charles Schneider Baking Co., 413 I St., N. W., has permit for \$25,000 bakery, 413 I St., N. W.; Charles H. Tompkins Co., 1608 K St., N. W., Gen. Contr.; E. L. Bullock, Jr., Archt., 3430 Porter St., N. W.

Fla., Jacksonville—Freedman - Nicollell, Inc., formerly of Okeechobee, leased building 2039 N. Main St., establish plant for manufacture nurses and maid's uniforms; plant at Okeechobee will be dismantled and moved here; output 200 doz. garments weekly.

Fla., Jacksonville—Moncrief Amusement Corp., incorporated; W. B. Lamb, 11 W. 20th St.

Ga., Atlanta—Atlanta Life Insurance Co., 148 Auburn Ave., consolidated with Booker T. Washington Life Insurance Co.

Ga., Columbus—R. W. Page Corp., W. E. Page, Pres., having plans drawn for building for Ledger and Enquirer Sun, to be submitted to contractors in few days; about 10 days to be allowed for contractors to furnish estimates and about 100 days for completion of building.

Ky., Louisville—Springless Scales Co., capital \$30,000, incorporated; J. E. Bobb, 551 S. Second St.

Ky., Shelbyville—Clifford Walters and D. T. Long erect 170x120 ft. prize room to be leased to Liggett & Myers Tobacco Co., 4241 Fisom St., St. Louis, Mo.

La., Ruston—Dr. Pepper Bottling Co., capital \$25,000, incorporated; W. J. Sinclair.

La., New Orleans—Murphy Iron & Boiler Works, Inc., capital \$25,000, incorporated; Wm. J. Murphy, 1322 Felicity St.

La., New Orleans—Radio-Keith-Orpheum Corp. has plans in progress, to be ready for bids in about 30 days, for film exchange, Cleveland Ave. near Liberty St.; 2 story, 32x110 ft., fireproof, face brick, stone trim, rein. conc. foundation, built-up comp. roof, steel and iron work, steel sash, metal doors, sheet metal work, wood and conc. floors; Theard & Matthews, Archts., Balter Bldg.

Miss., Laurel—Continental Electric & Mfg. Co., W. H. Jolly, Pres., First Natl. Bank Bldg., erecting plant on Ninth Ave.; excavation under way; 40x165 ft., brick, conc. foundation and floor, 2 story; L. W. Duffee, Archt. (See Foundry and Machine Plants, 2-13.)

Mo., Carthage—Hercules Powder Co., Inc., Wilmington, Del., advises, rearrangement of plant facilities at explosives plant is being undertaken by Hercules Powder Co. at cost est. at \$175,000; 13 small buildings in plant area are to be replaced by 9 new buildings, modern in design and equipment; contracts not to be awarded, installation being carried out by company's forces under direction of Plant Supt. J. S. Marks, Carthage, and Constr. Engr. R. K. Hallett, Wilmington, Del.

Mo., Kansas City—Forman & Clark Clothing Co., 28 W. Twenty-third St., plans erecting \$65,000 building N. E. Cor. Twelfth and Walnut Sts.; 3 story, conc. and limestone; H. J. Knauer, Archt., Seventh and Hills Los Angeles, Cal.

Mo., Kansas City—Colgate-Palmolive-Peet Co., Karl A. McVey, Supt., 17th and Kansas Sts., erecting \$160,000 unit for daily production 30 tons of soap heads; struc. steel, corrugated iron, insulation, 124 ft. high and 48x24 ft. ground area; hot soap to be forced to tower top, sprayed under pressure through 8 nozzles into tank where it mixes with hot air and drops down tower, forming soap globules which are to be mechanically conveyed to adjoining building for packing; operate 24 hours daily; Kansas City Structural Steel Co., 21st St. and Metropolitan Ave., and Darby Corp., 923 N. Third St., Contrs.

Mo., Hopkins—Gillespie-New Mfg. Co., capital \$100,000, incorporated; Loren L. Gillespie, Frank New, Jr.; manufacture patent device for candling eggs.

Mo., Jefferson City—Tribune Printing Co., publishers of Post-Tribune, R. C. Goshorn, Sec.-Treas., contemplates erecting \$75,000 newspaper plant.

Mo., St. Louis—American Paint Journal Co., publishers, Allen W. Clark, Pres., erecting 4-story, fireproof, rein. conc. building, 3713 Washington Blvd.; Carthage stone front, polychrome brick panels, passenger elevator; W. F. Manske & Associates, Inc., Archts., 4064 Olive St.; William H. & Nelson Cunliff Co., Gen. Contrs., 3327 Lindell St.; subcontractors are: Excavation, Wells Drayage Co.; rein. steel, Laclede Steel Co., Arcade Bldg.; rein. steel specialties, Curtis & Burgess, Syndicate Trust Bldg.; plumbing, Moore Plumbing Co., 15313 St. Louis St.; heating, Eichler Heating Co., Ry. Exch. Bldg.; electrical work, Gamp Electrical Co., 517 Spruce St., all St. Louis; elevators, Daughton Elevator Co., Toledo, Ohio. 7-3

Mo., St. Louis—Sampson Industries, Inc., incorporated; Charles L. Sampson, 6603 University Drive; manufacture radios.

Mo., St. Louis—United Infants & Children Wear Co., 1504 Washington St., capital \$20,000, incorporated; Victor Grober, 6308 Gates St.

Mo., St. Louis—Fresh Air Putting Greens, Inc., incorporated; C. G. Chandler, 3455a Osage St.

Mo., St. Louis—International Coin Separator Co., Inc., chartered; G. A. Morris, 4112a Ashland St.

Mo., St. Louis—Supreme Felt & Bedding Co., capital \$20,000, incorporated; David Keiner, 1216 Walton St.; operate mill at 218 S. Seventeenth St.

Mo., Thayer—Missouri Cheese Co., F. M. G. Luecke, Pres., Medical Arts Bldg., Springfield, plans establishing cheese plant at Thayer; later plans establishing 10 factories.

N. C., Charlotte—General Dyestuff Corp., 220 W. First St., erect warehouse S. E. Cor. South Blvd. at Lexington Ave.; cost \$50,000; 3 story, 60x110 ft.; install exhaust ventilating fans; equip laboratory with modern dyestuff equipment; Blythe & Isenhour, Contrs., Brevard Court.

N. C., Charlotte—City, R. W. Rigsby, Mgr., soon purchase and install latest improved type of control equipment for downtown traffic signal lights.

N. C., Greensboro—In-Door Sports Corp., incorporated; H. C. Parks, Silver City; H. D. Aiken, Southern Life & Trust Bldg., Greensboro; manufacture amusement devices.

N. C., Lexington—Dixie Bottling Co., incorporated; Fred C. Sink, J. A. Walser.

N. C., Raleigh—John W. Hudson, Jr., Inc., capital \$100,000, chartered; John W. Hudson, Jr., Raleigh Bank & Trust Bldg.

N. C., Wilmington—Bd. of Commrs. receives bids July 16 for installing traffic signals and improved apparatus for downtown section; Walter H. Blair, Mayor.

Okl., Oklahoma City—Physicians Life & Accident Co., capital \$250,000, incorporated; Charles N. Berry, Medical Arts Bldg.

S. C., Columbia—Foremost Dairy Products, Inc., Burdette G. Lewis, Pres., 135 Riverside Ave., Jacksonville, Fla., install additional equipment to produce 1000 gal. ice cream and other frozen products daily; plans establishing distributing station.

Tex., Austin—J. F. Johnson, 500 E. Third St., has contract to build municipal slaughtering and packing plant; M. L. Diver, Engr., Calcasieu Bldg., San Antonio; Hugo F. Kuehne, Archt., Littlefield Bldg., Austin; P. W. McFadden, Mayor. 6-12

Tex., Dalhart—Dalhart Coca Cola Bottling Co. increased capital \$10,000 to \$55,000.

Tex., Dallas—Dallas Battery Co., Inc., chartered; Harry Hargett, 502 S. Willmet St.

Tex., Fort Worth—Publix Cleaners and Dyers incorporated; S. Bernstein, 515 W. Weatherford St.

Tex., Fort Worth—Hensley Electric Co., capital \$50,000, incorporated; J. S. Hensley, 2245 N. Main St.

Tex., Fort Worth—R. H. Gunn, Stop, Va., has permit for \$10,000 cleaning plant.

Tex., Grand Saline—Grand Saline Steam Laundry incorporated; W. I. Wynne, Dr. W. L. Garland.

Tex., Houston—Shepherd Laundries Co., G. H. Shepherd, Pres., 725 Washington St., acquired site, ready for bids for \$365,000 to \$70,000 plant, 2400 block Louisiana St.; rein. conc., fireproof; James Ruskin Bailey, Archt., Public Natl. Bank Bldg.

Tex., Houston—T. B. Hubbard Construction Co., capital \$150,000, incorporated; T. B. Hubbard, 1507 Shepherd St.

Tex., Houston—Editorial Publishing Co. incorporated; W. R. Morin, 2902 Morrison St.

Tex., Houston—Russell Brown Co., 3104 Main St., builders and owners, will erect building for Master Cleaners & Dyers, Inc.; 60x100 ft., rein. conc. and masonry, 1 story and mezzanine, conc. floor, asphalt roof; install laundry machine. 6-26

Tex., Orange—Electric Appliance Co., 410 Canal St., New Orleans, La., reported, has contract for electric traffic signal system on Fifth St. at intersection of Front and Main.

Tex., Paris—Boedeker Co., Bedford B. Harlan, manager of Paris plant, install equipment for pasteurizing and distributing whole milk.

Tex., San Antonio—E. Y. White, 701 Broadway, having plans drawn, to be complete about July 15, for laundry, E. Josephine St. near Elmira; 1 story, brick, rein. conc.; Robert B. Kelly, Archt., Milam Bldg.; M. L. Diver, Engr., Calcasieu Bldg.

Va., Richmond—Manson-Smith Co., Inc., capital \$25,000, incorporated; S. Lynn Manson, 4200 Seminary Ave.; manufacture ornamental sheet metal.

Va., Winchester—H. J. Heinz Co., 1062 Progress St., Pittsburgh, Pa., immediately place plans and specifications in hands of contractors for first unit of 14-acre plant; includes 5 or 6 buildings, main structure to be 3 stories, brick, conc. and steel; to be completed by Sept. 10. 6-12

W. Va., Point Pleasant—H. C. Ogden, 1500 Main St., Wheeling, W. R. Keyser, 231 Virginia St., Welch, and associates forming new company with \$50,000 capital, to acquire Point Pleasant register, weekly newspaper.

W. Va., Wheeling—Chamber of Commerce, R. W. Holecombe, Mgr., and City Council working out plans for police alarm system to require boxes, lights and wire. 6-24

### **Motor Bus Lines and Terminals**

Ark., Little Rock—Applicants to Arkansas Railroad Comsn. for permission to operate transportation facilities are: E. H. Beasley, Mena, ambulance service; Joe Thomas, Scranton, freight line Scranton to Subiaco over Highway 22; Byron Shirley, Charleston, freight line Charleston to Fort Smith, over Highway 22; O. K. Transfer Service, Rogers; L. D. Huggins, Ozark, freight line Ozark to St. Paul and Fayetteville via Highway 23.

Tenn., Memphis—Pickwick-Greyhound Lines, H. H. Morgan, Gen. Mgr., 119 W. 11th St., Kansas City, Mo., Gene Allen, Dist. Mgr., and Lone Star Stages have plans complete and will start construction at once on \$250,000 union bus terminal, Main St. and Beale Ave.; 217x134 ft., fireproof throughout; will include arcade, waiting rooms, ticket offices, baggage rooms, loading platform, restaurant, newsstand, telegraph and taxi stands, etc.; plans approved by F. B. Archer, Dist. Passenger Agt., Pickwick-Greyhound Lines; terminal to be constructed by Union Bus Terminal Corp., yet to be organized; Anker F. Hansen, Archt., Shrine Bldg. 3-13

Tex., Sherman—John Tulloch, Sherman, preparing plans for alterations to Eubanks Bldg., cor. E. Houston and N. Walnut Sts., for bus terminal; terminal to be arranged according to plans by Texas Railroad Comsn.; will replace station now in operation on W. Lamar St. 6-28

### **Railways**

Ala., Mobile—Gulf, Mobile & Northern R. R. Co., P. E. Odell, V-Pres. and Gen. Mgr., advises \$1,100,000 of proceeds of \$3,000,000 bond issue will be used for 42 mi. of new 90-lb. rail, bank widening, grade revision, ballast and improvements to water front property at Mobile. 6-28

Ky., Carver—Chesapeake & Ohio Ry. Co., J. J. Bernet, Pres., Richmond, Va., acquired Big Sandy & Kentucky River Line, of Dawkins Lumber Co., Ashland, 26-mi. line connecting Dawkins on C. & O. with Carver,

Knott County; line taps rich region of coal, oil and gas deposits.

Kentucky—Louisville & Nashville R. R., W. R. Cole, Pres., Louisville, applied to Interstate Commerce Comsn. for permission to operate Carrollton Railroad and to acquire property of Carrollton & Worthville R. R., with 10-mile line from Carrollton to Worthville; also applied for authority to acquire 1.36 miles of Pontchartrain R. R., New Orleans, La.

Tex., Dallas—St Louis-San Francisco Ry. Co., J. M. Kurn, Pres., St. Louis, Mo., reported, acquired entire capital stock of Gulf-Texas & Western Ry. Co., W. F. Knox, Receiver, Dallas, involving approx. \$1,800,000; 100-mi. line operating in Northwestern Texas.

Texas—Quanah, Acme & Pacific R. R., Charles H. Sommer, Pres., St. Louis, Mo., applied to Railroad Comsn., Austin, for permission to issue \$940,000 bonds for expenditure in Floydada extension, purchase of Matley County R. R., etc.; company has under construction 3 mile gap from Quanah to Acme to be completed by October.

Tex., Amarillo—Sharp and Fellows Contracting Co., 533 Central Bldg., Los Angeles, Cal., and Amarillo, Tex., advises following sub-contracts have been let in connection with railroad line Amarillo, Tex. to Boise City, Okla., for Atchison, Topeka & Santa Fe Ry. Co., Chicago; grading subcontractors: James Martin, Los Angeles, Cal.; Roy Skousen, San Bernardino, Cal.; T. M. Brown, Dodson, Mo.; McKnight Transfer, Livery & Sales Co., 108 Taylor St., Amarillo; A. A. Luck, Rialto Bldg.; Kansas City, Mo.; W. T. McClure & H. H. Sprague, Tucumcari, New Mexico; Marsh Bros. & Gardener, San Francisco, Cal.; Walter H. Denison, Cushman, Ark.; concrete boxes, Allhands & Davis, Southwestern Life Bldg., Dallas, Tex.; track work, Wm. A. Smith Construction Co., 5600 Canal St., Houston; wood boxes, W. R. Grinnell, San Angelo; hauling, Walter H. Denison, Cushman, Ark. 6-26

Tex., Amarillo—Sharp and Fellows Contracting Co., 533 Central Bldg., Los Angeles, Cal., and Amarillo, Tex., advises following sub-contracts have been let in connection with railroad line Amarillo, Tex. to Boise City, Okla., for Atchison, Topeka & Santa Fe Ry. Co., Chicago; grading subcontractors: James Martin, Los Angeles, Cal.; Roy Skousen, San Bernardino, Cal.; T. M. Brown, Dodson, Mo.; McKnight Transfer, Livery & Sales Co., 108 Taylor St., Amarillo; A. A. Luck, Rialto Bldg.; Kansas City, Mo.; W. T. McClure & H. H. Sprague, Tucumcari, New Mexico; Marsh Bros. & Gardener, San Francisco, Cal.; Walter H. Denison, Cushman, Ark.; concrete boxes, Allhands & Davis, Southwestern Life Bldg., Dallas, Tex.; track work, Wm. A. Smith Construction Co., 5600 Canal St., Houston; wood boxes, W. R. Grinnell, San Angelo; hauling, Walter H. Denison, Cushman, Ark.

### **Railway Shops and Terminals**

Ky., Shelbyville—R. D. Cole Mfg. Co., Newnan, Ga., advises regarding report that company has contract for water treating plant of Southern Ry., B. Herman, Ch. Engr., Washington, D. C., "Our only portion of this was a standpipe which we erected on direct contract with Southern Ry." piping and other construction by owner. (See Railways, 7-3).

W. Va., Seth—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond, Va., let contract to Pittsburgh Des Moines Steel Co., Pittsburgh, Pa., for water treating station.

### **Roads, Streets and Paving**

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

#### **Proposed Construction**

Ala., Birmingham—City Comsn. considering opening and paving Twenty-second St., Eighth to Eleventh Ave., North; A. J. Hawkins, City Engr.

Ala., Mobile—City Comms., S. H. Hendrix, City Clk., considering plans for Twenty-seventh Paving Venture; Wright Smith, City Engr.

Ark., Hot Springs—Bd. of Comms. Street Improvement Dist. No. 138, J. W. Dodson, Chmn., plans street improvements, cost about \$13,100; work to start soon; H. S. Moreland, City Engr.

Florida—State Road Dept., Tallahassee, let contract to Fred D. Beasley, Tampa, at \$20,295 for 10.55 mi. treatment on Road No. 27, Collier County. 6-22

Ga., La Fayette—Constructing Quartermaster, Capt. W. J. Redner, Fort Oglethorpe, received low bid from Brown Contracting Co., 706 Manning St., Chattanooga, Tenn., at \$386,001, for 12.23 mi. 8-6-8 in. conc. paving, grading, draining, La Fayette road and one 438-ft. steel and conc. bridge over West Chickamauga Creek. 6-12

Ga., Trenton—State Highway Bd., Atlanta, making survey for highway through Dade County, from Tennessee line to Georgia line; conc. road, 80-ft. right of way, 43-ft. roadbed.

Kentucky—State Highway Comsn., Frankfort, receives bids until July 30, bituminous surface treatment or retread on following: Group 1—Hart County, Munfordsville-Elizabethtown road, Munfordsville north to Hart County line, 7.85 mi. 16 and 18 ft. width; Munfordsville-Bowling Green road, Munfordsville south to Horse Cave, 8 mi., 16 ft. width; Munfordsville-Bowling Green Road, 18T ft.; Group 2—Hardin County, Elizabeth-Horse Cave to Barren County line, 2 mi., Elizabeth-Leitchfield road, Elizabethtown south for 6.1 mi., 16 ft.; Elizabethtown-Munfordsville road, south of Elizabethtown to Hart County line, 16.12 mi., 18 ft.; Group 3—Owen County, Okenton-Carrollton road, Eagle Creek Bridge to junct. Owenton-Sparta road, 14.416 mi., 17 ft., all surface treatment; Owenton-Sparta road, Bromley to Sparta, 4 mi., both surface treatment; Owenton-Gratz road, 4 mi. towards Gratz; Owenton-Sparta road, Owenton to Bromley, 8 mi. both retread; Group 4—Harrison County, Cynthiana-Georgetown rd., west of Synthiana to Scott County line, 6.5 mi., surface treatment; Scott County, Georgetown-Williamsburg road, Georgetown to conc. paving; 5.5 mi. retread; Georgetown-Lexington road, Georgetown south 3.2 miles; Georgetown-Cynthiana road, Georgetown to Oxford, 8 mi. surface treatment.

Group 5—Brooksville-Maysville road, Brooksville to Mason County line, 6 mi., surface treatment; Bracken County, Brooksville-Cynthiana road, Brooksville to Powersville, 4 mi. retread; 7.8 mi. Powersville to Robertson County line; Brooksville-Newport road, Powersville to Pendleton County line, 7.8 mi. surface treatment; Pendleton County, Alexandria-Brooksville road, Peach Grove, 5.7 mi. past Bracken County line, surface treatment; Group 6—Fayette County, Lexington-Richmond road, Kentucky River, 5.32 miles to Lexington, surface treatment; Madison County, Richmond-Irvine road, Richmond 5.4 mi. to Boerly, retread; Richmond-Winchester road, Kentucky River to trafficbound macad., 4.072 mi. retread; Group 7—Bole County, Danville-Burgs road, Danville to Mercer County line, 4.55 mi. surface treatment; 2 mi. Danville-Lancaster road, 4.306 Danville-Liberty road; Lincoln County—5 mi. Danville-Liberty road, Boyle County line to Moreland; Group 8—Lincoln County, 15.516 mi. surface treatment Stanford-Somerset road, Stanford to Waynesburg; also 4 mi. retread treatment, Waynesburg to Pulaski County line; Group 9—Rockcastle County, 7.05 mi. Mt Vernon-Berea road, Mt. Vernon to sandstone, retread; Madison County, Richmond-Berea road, 5.643 mi. Kingston to Berea; retread; Berea-Big Hill road, Berea 2.55 mi. east, retread; Group 10—Laurel County, 13.33 mi. retread London-Corbin road; Whitley County, Williamsburg-Corbin road, Corbin, 2 mi. south, both retread; Ben Johnson, Chmn.

Kentucky—State Highway Comsn., Frankfort, receives bids July 31 for 17 roads and 3 bridges: Fleming County—4.8 mi. grade, drain, surface; Flemingsburg-Maysville (Fields Highway), Flemingsburg to Mason County line; Floyd County—grade, drain, including rein. conc. approach spans, and substructure for bridges at Sta. 339 plus 27, two 50-ft. rein. conc. spans, and Sta. 347 plus 50, two 50-ft. rein. conc. spans, on Allen-Lackey road, from north of Martin to point east of Dinwood; steel superstructures, one 161-ft. and one 140-ft. steel spans; Graves County—10.9 mi. surface, Mayfield-Fulton road, U. S. Route No. 45, from point near Wingo to Fulton; Harrison County—10 mi. grade, drain, Cynthiana-Brooksville road, Oddville to Bracken County line; Henry County—12.7 mi. surface, North Pleasureville-Gratz road, from North Pleasureville to point near Gratz.

In Hopkins County—14.1 mi. surface, Dixon-Medisonville road, U. S. No. 41, Madisonville to McGaw School; Madison County—6.3 mi. grade, drain, Nicholasville (Tates Creek) road, Richmond to point north of Million; Mercer County—3.4 mi. grade, drain, Harrodsburg-Springfield road, from point west of Rose Hill road, to Washington County line; Monroe County—5.6 mi. grade, drain, Tompkinsville-Scottsville road, from Gamaliel road to point southeast of Flippin; Morgan County—22.2 mi. surface, West Liberty-Salyersville road, from West Liberty to Salyersville; Nelson County—7.3 mi. surface, Bardstown-Loretto road, from Old Kentucky Home, near Bardstown to Mahoney's store; Nicholas County—6 mi. grade, drain, Carlisle-Flemingsburg road, Carlisle to Myers Station; Pike County—8.9 mi. surface, Pikeville-Prestonsburg (Mayo Trail) road, Pikeville to Floyd County line; 6.5 mi. surface, Pikeville-Whitesburg (Mayo Trail) road, Pikeville to end of bridge at Shelia.

In Rowan County—12.2 mi. surface, Morehead-Grayson (Midland Trail) road, end of black top surfacing at Gates to Olive Hill; Taylor County—5.3 mi. surface, Campbellsville-Greensburg road, Campbellsville to

Green County line; Webster County—7 mi. surface, through town of Dixon; Casey County—bridge over Green River, about 1 mi. east of Liberty on Liberty-Somerset road; seven 50-ft. rein. conc. deck girder spans; Elliott County—rein. conc. substruc-tures for steel spans at Sta. 501 plus 65, and two rein. conc. spans at Sta. 672 plus 18, steel superstructure, one 130-ft. span, Sta. 501 plus 65, all on Sandy Hook-Rodburn road; H. D. Palmore, State Highway Engr.

Ky., Frankfort—City, T. E. Kenney, Mayor, plans receiving bids for paving Mero St. and part of Park Ave.

Ky., Hopkinsville—State Highway Comsn., Frankfort, receives bids July 31, August 22 or September 26, for 10 mi. grading, draining, Fort Donaldson trail from Hopkinsville toward LaFayette, Christian County; also plans receiving bids to improve 15 mi. U. S. Highway No. 60, from city limits of Henderson, Henderson County, to Union County line; trafficbound macad. road, from Morganfield, Union County to Webster County line; H. D. Palmore, State Highway Engr.

Ky., Louisville—City, Dept. of Works, receives bids July 11 for 18 alleys, Maryland Ave. to Speed Ave.; Eleanor to Wallace; Catherine to Kentucky, etc.

La., New Orleans—City Comsn. Council considering paving 19 streets, avenues, etc., including Burdette, Desire, De Soto St.; Caffin Ave.; Cromwell Place; Bryson Vallas, Engr.

Maryland—State Roads Comsn., Baltimore, receives bids July 15 for 9 roads: Baltimore City—4.41 mi. sheet asphalt; Frederick road, Yale Ave. to Beechfield Ave., Cont. BC-91-72; Cecil County—4.53 mi. conc., from Port Deposit to Conowingo, Cont. Ce-80-28; Charles County—2 mi. gravel, from Port Tobacco toward Chapel Point, Ch-89-34; Frederick County—1 mi. conc., end of Cont. F-105 west of Licksville toward Point of Rocks, Cont. F-137-54; 6 mi. conc. and conc. shoulders, Frederick-Thurmont road, from Harmony Grove to Creagerstown road, Cont. F-149-511; Garrett County—2 mi. conc., Lock-Lynn Gorman road, end of Cont. G-40 toward Gorman, G-159-62; Montgomery County—1 mi. conc. shoulders, Wilson Lane, end of conc. shoulders near Bethesda toward Glen Echo; 1 mi. conc. shoulders, Bradley Blvd., Wilson Lane toward Leland's Corner, Cont. M-156-311; Prince George's County—3.67 mi. gravel, Aquasco to Charles County line, Cont. P-end of P-94 south of Horsehead through 122-84; St. Mary's County—1 mi. gravel, from Abell road toward Oakley, Cont. SM-68-82; L. H. Stewart, Sec.

Md., Baltimore—City, Bd. of Awards, received low bid from Baltimore Asphalt Block & Tile Co., 1320 N. Monroe St., at \$56,113, to widen 27 to 45-ft. and pave roadway of old Courtland St., Lexington to Centre; contract includes paving Ylando road, Grey-stone road to Chestnut Hill Ave.; Heath St., Hanover to Race; McCurley St. in Frederick road section; Charles F. Goob, Ch. Engr.

Md., Hyndman Borough, Cumberland—Hyndman Borough Council receives bids July 22 for grading and 7,500 sq. yds. tar bound macad. paving; Lewis M. Weld, Borough Engr.

Miss., Holly Springs—Town, Mayor and Bd. of Aldermen, receives bids July 11 for improving certain streets: 1,000 cu. yd. excavation, 6,560 sq. yd. 6-in. conc. paving, 4,500 lin. ft. combined curb and gutter.

Miss., McComb — City, X. A. Kramer, Mayor, receives bids Aug. 5 to improve certain streets, including Scott St. and Argyle Ave.; 6,830 sq. yd. paving, 2,300 cu. yd. excavation, 3,220 lin. ft. curb and gutter, manholes, catch basins; Henry A. Mentz & Co., Engrs., McComb, Miss., or Hammond, La.

Mo., St. Louis—See Bridges Proposed.

North Carolina—State Highway Comsn., Raleigh, receives bids July 29 for 5 roads and 2 bridges, costing about \$400,000: Scotland County—16 mi. topsoil or sand clay and structures Highway No. 241, Laurinburg to Hoke County line toward Aberdeen; Columbus County—12 mi. grading, gravel surfacing, Highway No. 23, Whiteville to Bladen County line toward Clarkton; Anson County—8 mi. hard surface, Highway No. 80, Wadesboro to Morven; 9 mi. hard surface, Highway No. 80, Wadesboro toward Ansonville; Durham County—bridge over railroad at Duke University, Highway No. 751; Surry County—bridge over railroad at Pilot Mountain; John D. Wal-drop, State Highway Engr.

N. C., Winston-Salem—City, Public Works Committee, Harry L. Shaner, Commr., plans receiving bids for sidewalk on Liberty St.; for driveway and sidewalk at Liberty and Chestnut Ave.

Okla., Oklahoma City—City, E. M. Fry, Mgr., received low bids for 6 paving projects: Western Paving Co., 610 Grand St., at \$4.48 per yd. for asphalt, on Twenty-third St.; at \$3.47 per yd. for paving Twenty-first, Twenty-second St., and Gatewood Ave.; Connally Bros., El Reno, at \$2.57 per yd. for conc. paving, Twenty-third; M. A. Swatek Construction Co., 519½ W. Main St., at \$2.60 per yd. for paving alley in Edwards Addition; plans paving Twenty-ninth, Santa Fe tracks to High Ave.; city engineer drawing plans for repaving Seventeenth St., Broadway to Dewey Ave. 6-19

Okla., Oklahoma City—City, M. Peshek, Jr., Clk., plans expending \$1,115,500 for street improvement, including \$410,000 to widen Walker Ave.; \$275,000 open and widen Central Ave.; \$140,500 for Diagonal Blvd. to Capital; \$290,000, open and widen Dewey Ave.; \$500,000 for Central Ave. viaduct, George F. Brown, City Engr. See Financial News Columns.

S. C., West Greenville, Greenville—Town plans expending \$32,000 for sidewalks, curbs, gutters and storm sewers.

Tenn., Chattanooga—Hamilton County Highway Comms., T. S. Wilcox, Chmn., receive bids July 11 to improve 5 mi. Hickory Valley road, from Lee Highway to Oak Hill Dr., with approaches thereto.

Tenn., Trenton—Gibson County plans expending \$500,000 to build about 120 mi. roads. See Financial News Columns. 6-26

Texas—State Highway Comsn., Austin, appropriated funds for 3 roads: Burnet County—10 mi. single bit. surface treatment, Highway No. 74, Williamson County line north, estimated cost \$28,650; D. E. H. Mangault, Div. Engr., Austin; Lavaca County—3 mi. bit. seal coat treatment, Highway No. 72, Hallettsville to Fayette County line, estimated cost \$10,290; S. C. McCarty, Div. Engr., Yoakum; Harrison County—8.1 mi. shoulders, ditching, gravel base, double bit. surface treatment, Highway No. 8, Marshall to Roseborough Springs road, estimated cost \$53,800; Gibb Gilchrist, State Highway Engr.

Tex., Austin—City, Adam R. Johnson, Mgr., plans starting work soon on Waller Creek Blvd., grading right of way from Duval St. to Thirtieth St.

Tex., Childress—Childress County, Sumner D. Bacon, County Engr., completing survey and plans of Highway No. 5, from Childress to east line of county; State Highway Comsn., Austin, probably let contract for grading road in Sept.

Tex., Corsicana—State Highway Comsn., Austin, appropriated funds for 4 mi. gravel surface, on earth detour road, Highway No. 14, under construction, between Emhouse and Chambers Creek, Navarro County, estimated cost \$12,930; E. C. Woodward, Div. Engr., Waco.

Tex., Dalhart—City, Sam Marks, Sec., plans expending \$20,000 for street improvement. See Financial News Columns.

Tex., Dallas—City, J. Waddy Tate, Mayor, plans starting, before Aug. 1 to widen Ross Ave. to 80 ft.; David Robinson, City Plan Engr.

Tex., Dallas—Dallas County Comms. Court receives bids July 21 for grading, draining and 20-ft. conc. pavement, Lawn View Extension road, from Parkdale to Forney Ave.; Rollins & Clinger, Dist. Engrs.

Tex., Dallas—Dallas County Comms. Court, Charles E. Gross, County Auditor, receives bids July 28 for inverted penetration surfacing on 5 roads in Comms. Dist. No. 1 2½ mi. Garland-Grapevine road, from Dist. No. 1 line to Richardson road; 3½ mi. Coit road, from Mocking Bird Lane to Glen Haven Country Club; 1 mi. Porter road, Mocking Bird Lane to Lover's Lane; 2 mi. Walnut Hill road, from Midway Church to Preston road; 6 mi. Belt Line road, from Preston road to Richardson road; also receives bids July 28 for paving Unit 3, of Buckner Blvd., from Garland road to line between Comms. Dist. No. 1 and 2; grading and graveling road along Comms. Dist. line, from Buckner Blvd. to road around White Rock Lake; for construction of bridges across Duck Creek on Duckworth road, east of New Hope; Rollins & Clinger, Dist. Engrs.

Tex., Dumas—Moore County plans expending \$250,000 toward paving 30 mi. State Road No. 115 through county, north to south. See Financial News Columns. 6-12

Tex., Galveston—State Highway Comsn., Austin, probably let contract in July for building State Highway No. 58, Galveston-Alvin road, Galveston County; E. B. Holman, County Judge.

Tex., Groesbeck—State Highway Comsn., Austin, will conc. Highway No. 14, from Groesbeck to Kosse, Limestone County; Gibb Gilchrist, State Highway Engr.

Tex., Houston—Harris County Comms., Norman Atkinson, County Judge, receives bids soon for 2 roads: 4 mi. paving, Crosby-Dayton road, connecting with Highway No. 3, east of Crosby, cost about \$130,000; widening and draining, La Porte road, from Sincel underpass to Deer Park, cost about \$60,000; Charles R. Haile, County Engr.

Tex., Houston—Harris County, Norman Atkinson, County Judge, completed plans for 3 mi. grading, draining, Shreveport, airline road, Humble road, Highway No. 38, from Humble to Montgomery County line; also San Jacinto River Bridge on Shreveport airline road, 1700-ft. steel and conc. span; A. J. Wise, Res. State Highway Engr.

Tex., Houston—City, W. E. Monteith, Mayor, received low bid from Gulf Bituminous Co., 2820 Polk St., at \$21,918, for paving Chartres St., Cleburne to Blodgett Ave.; from Griswold Bros., 3840 Polk St., for 18-ft. gravel paving on Chapman St.; considering paving Green Briar Drive, 42 ft. wide, Shakespeare road to Rice Blvd.; J. N. Nagle, City Engr.

Tex., Johnson City—Blanco County plans expending \$15,000 for road building. See Financial News Columns.

Tex., Lefors—Gray County plans expending \$3,500,000 for road improvement. See Financial News Columns. 6-5

Tex., Mineola—City, Jonathan Russell, Mayor, considering paving 8 blocks in business dist., cost about \$45,000.

Tex., San Antonio—City Comms., James Simpson, City Clk., plan receiving bids for asphalt topping on roadway around Sunken Garden, Brackenridge Park.

Tex., Victoria—City, S. S. Sitterle, Mayor, receives bids July 15 for 19,755 sq. yd. paving, 7,017 lin. ft. monolithic 8-in. curb, 4,485 lin. ft. esplanade curb, 88,898 lb. rein. steel, 7,258 cu. yd. excavation.

Virginia—State Highway Comsn., Richmond, received low bids, totaling \$77,274, for 2 roads and bridges: Grayson County—1.2 mi. grading, draining, Route 26, Jim Frank, Clinchport, \$16,993; Clark County—2.4 mi. macad. roadway, Route 54, Poffenberger & Mause, Myersville, Md., \$57,171; King William County, repairs to fender system of Gresham Bridge over Mattaponi River, West Point, Route 30, J. S. Bowers, Whiteville, N. C. 7-1

Virginia—State Highway Comsn., Richmond, receives bids July 22 for 5 roads and 4 bridges: Giles County—4 mi. macad., Routes 23 and 316, from point north of Narrows to West Virginia line, 44,888 sq. yd. Ricj Creek, 31,240 lb. rein. steel; Highland macad., 3,478 lb. rein. steel, also bridge over County—7.5 mi. grade, drain, Route 800, from West Virginia line to Monterey, 14,928 cu. yd. excavation, 77,180 lb. rein. steel, over Southern Branch of Potomac River, 105,175 lb. rein. steel Princess Anne County—10 mi. grade, drain, Route 502, from Princess Anne Courthouse to intersection of Route 27, 72,511 cu. yd. excavation, 20,058 lb. rein. steel; Northumberland County—9.6 mi. grade, drain, Route 607, Callac to Hague, 103,510 cu. yd. excavation, 5,402 lb. rein. steel; Appomattox County—11.7 mi. soil, Route 306, point north of Vera to point south, 38,404 cu. yd. 93,008 cu. yd. excavation; also bridge over Slater River, 8,985 lb. rein. steel; Stafford County—77-ft. bridge over Potomac Run, Route 31, 5 mi. from Fredericksburg, two 35-ft. steel beam spans, 11,000 lb. rein. steel, 45,000 lb. struct. steel; C. S. Mullen, Ch. Engr.

W. Va., Ripley—Jackson County plans expending \$30,000 for roads in Union Road Dist. See Financial News Columns.

W. Va., Ripley—Jackson County Union Road District votes Aug. 5 on \$30,000 road bonds.

#### Contracts Awarded

Ala., Montgomery—City, W. A. Gunter, Mayor let contract to Hodgson-Jones Construction Co., N. Perry St., at \$5,641, to pave Lexington road, and Norman Bridge road; J. M. Garrett, City Engr.

Ark., Fayetteville—Comms. of Improvement Dist. No. 45 let contract to Young-Bryan Construction Co., Fort Smith, for street paving in Dist.; Emmett Ratcliff, City Engr.

Ky., Frankfort—City, T. E. Kenney, Mayor, let contract to Andrews Asphalt Co., Hamilton, Ohio, at \$36,725, for paving certain streets with 2-in. top Trinidad asphalt and 4-in. reconstructed macad. base. 7-3

Ky., Frankfort—City, Mervin Parren, Clk., let contract to Andrews Asphalt Paving Co., Hamilton, Ohio, for hot asphaltic mix paving on reconstructed macadam base; \$36,000. 4-3

Ky., Newport—City Comms. let contract to Republic Asphalt Paving Co., 857 Wehrman Ave., Cincinnati, at \$8861, for rebuilding and widening Third St. from Third to Court Place.

La., Alexandria — apides Parish Police Jury, W. D. Rush, Pres., let contract to Leathers & Martin, Alexandria, at \$19,998, for 17,390 tons gravel for road work in Ward No. 4.

La., Tallulah—Village, A. L. Sevier, Clk., let contract to Merrill Engineering Co., Lamar Bldg., Jackson, Miss., for paving Depot and Mulberry St. with Portland cement conc.

Miss., Kosciusko — Attala County Road Comms. let contracts for 36 mi. gravel roads in every beat in county: Hauling and spreading gravel—Clyde Hester and J. M. Sanders; Van Rainey and A. L. Allen; A. H. O'Briant and O. E. Mangrum; Brown Contracting Co.; gravel and sand—Lynn Gravel Co.; Avalon; Brookhaven Gravel Co.; Water & McCrary, Columbus; Southern Sand & Gravel Co., Columbus.

Miss., Tunica—City, W. G. Jaquess, Clk., let contract to Rast, Jones & Griffith, 3024 S. Twentieth St., Birmingham, Ala., at \$10,173, to pave Edwards St.; L. W. Mashburn, Engr., Clarksdale.

Tennessee—Dept. of Highways and Public Works, Nashville, let contracts for 6 roads: Obion County—4.668 mi. paving Highway No. 5, Kenton to point north, Lawrence Construction Co., Standard Life Bldg., Jackson, Miss., \$79,982; at \$142,933 for 8,600 mi. Highway No. 5, between point north of Kenton and Union City; Knox County — 2.820 miles grading, draining, Highway No. 33-A, between Mt. Olive road and Special Bridge Project 16B, at Knoxville, Lee A. Gridley Construction Co., Wray Ave., Knoxville, \$95,466; Washington County—9,929 mi. plain conc., Highway No. 36, Johnson City to Sullivan County line, Murray Construction Co., 508 Union Ave., Knoxville, \$237,238; Roane County—4.382 mi. grading, draining, Highway No. 22, Rhea County line to Highway No. 1, Johnson & Mathews, Rockwood, Tenn., \$45,750; Giles County—10,720 mi. conc. base and edging, asphalt surface, Highway No. 15, Lawrence County line to Pulaski, Roberts Paving Co., Salisbury, Md., \$255,731; T. E. McEwen, State Highway Engr.

Tenn., Jackson—City, R. L. Balch, Clk., let contract to V. E. Schevenell Construction Co., 1280 Walker Ave., Memphis, at \$33,824, for paving 8 streets; E. R. Dike, City Engr.

Tex., Edna—City Comms. let contract to Brown & Root, Norwood Bldg., Austin, at about \$18,943 for 27,000 sq. yd. paving in business section.

Tex., Houston—City, W. E. Monteith Mayor, granted permit to Hedges Co., Inc., Esperon Bldg., to pave Windsor and Ridgewood St., with 2-course bit. surface, under private contract.

### Sewer Construction

**Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.**

Ala., Birmingham—City plans reconstruction of sanitary sewers on southside at cost of \$97,000.

Ky., Louisville—Pittsburgh Foundation Co., Keystone Bldg., Pittsburgh, Pa., has contract at \$1,749,464 for Section A, of Southwestern Outfall; bids will be invited upon remainder of this outfall upon completion of present section to be constructed; work being done from proceeds of \$10,000,000 sewer issue voted Nov. 4, 1928; Woolsey M. Caye, Technical Engr.

Md., Baltimore—Aiello Construction Co., Gough & Dean Sts., has contract for storm water Contr. No. 58, sewers, near Eastern Ave. underpass; Natalie Martell, 4400 Vesta Ave., for Storm Water Contr. No. 151, sewers in miscellaneous districts.

Miss., Greenville—City receives bids July 21 for sanitary sewers and laterals. See Want Section—Bids Asked.

Okla., Westville—See Water Works.

N. C., Asheville—Buncombe County and State Engineers started preliminary survey of sanitary conditions in Hominy Valley and

along stream flowing through it to ascertain whether earlier plans for building \$650,000 sewer will be necessary; also will decide whether sewage disposal plant for Swannanoa district will be required; field work has been largely completed.

N. C., Winston-Salem—W. H. Fetter Co., Reynolds Bldg., has contract for Buena Vista sewerage pumping station on Silas Creek.

Okla., Oklahoma City—City, reported, plans voting on bonds for sewers and water works. See Financial News Columns.

S. C., Charleston—Charleston Constructors Inc., Broad St., constructing 1800 ft. of storm drain with manholes and catch basins.

S. C., West Greenville, Greenville—See Roads, Street, Paving.

Tex., Dalhart—City plans voting July 21 on \$10,000 sewer bonds.

Tex., Lovelady—R. C. Nelson Co., 307 E. Seventh St., Dallas, reported, constructing water works and sewer system for city.

Tex., Georgetown—City approved plans by city engineering department for sewer line extensions; will soon call for bids for construction.

Tex., Mineola—City, reported, considering water and sewer improvements, cost \$20,000.

Tex., Temple—City, reported, plans rebuilding portion of sewer and water system.

### Street Railways

Ky., Louisville—Louisville Gas & Electric Co. acquired power plants, substations, transmission lines and other power equipment of Louisville Railway Co.; \$3,000,000 transaction; install new equipment in substation.

### Telephone Systems

Ark., Magnolia—Southwestern Bell Telephone Co., Dallas, Texas, let contract to T. L. Bennett, for telephone building N. E. Cor. Union and Madison Sts.; 1 story and basement; brick veneer.

Ark., Rogers—Southwestern Bell Telephone Co., St. Louis, Mo., G. A. M. Johnson, Dist. Mgr., soon start constructing pole line between Rogers and Fayetteville via Springdale.

N. C., Charlotte—Columbia Broadcasting System, Inc., H. V. Akeberg, Chief Engr., 483 Madison Ave., New York, acquired minority stock in Station WBT, owned by company headed by M. K. Gillian, Asbury Park, N. J.; requested permission from Federal Radio Station to construct 50,000-watt transmitter.

Okla., Wapanucka—Southwestern Bell Telephone Co., St. Louis, Mo., has plans by I. R. Timlin, Telephone Bldg., St. Louis, for 1 story and basement, brick repeater station; 60x50 ft., conc. foundation; comp. roof; steel sash.

Tex., McAllen—International Broadcasting Co., Inc., Reynosa, Tamps, Mexico, erecting business and advertising offices at McAllen and a 5,000-watt studio and broadcasting plant at Reynosa; studio, 1-story, brick, 50x80 ft., wood floors, asphalt roof, \$5,000; Robert C. Smallwood, Esperon Bldg., Houston, Archt.; material for 200-ft. steel towers furnished by Muskogee Iron Works, Frankfort and Spaulding St., erection by Beasley Construction Co., both Muskogee, Okla.; W. E. Branch, of Radio Engineering Laboratories, Fort Worth, Tex., contractor for installation of radio broadcasting equipment; J. E. Pate, Pres., Hildalgo, Tex., and J. C. Penn, Jr., managing director of International company.

W. Va., Charleston—Chesapeake & Potomac Telephone Co. of W. Va., J. W. Latham, Ch. Engr., advises regarding proposed telephone building: "Project considerably delayed and it will be some time before plans will be submitted to bidders;" Meador & Handloser, Architects, Payne Bldg.

### Textile Mills

Miss., Corinth—Knit Goods Corp. of America, E. J. Stringham, Pres., 40 E. Thirty-fourth St., New York, reported, completed arrangements for locating \$1,000,000 full-fashioned silk hosiery mill; will let contract immediately for construction of building, 210x425 ft., in either North or East Corinth; install 80 full-fashioned hosiery machines; city voted to invest \$18,000 of city funds in preferred stock; Richard E. Meinig, Rep. of Knit Goods Corp. of America, J. F. Serrine & Co., Greenville, S. C., Engrs.

Miss., Magnolia—Rountree Cotton Mills, Inc., reported, acquired by E. B. Kitzinger.

N. C., Burlington—Carolina Rayon Mills, reported, changed name from A. M. Johnson Rayon Mills Inc.; Frederick C. Neiderhauser handling details.

N. C., Charlotte—Morris Ellis, Emerald and Westmoreland Sts., Philadelphia, Pa., reported, plans establishing full fashioned hosiery mill, West First St. and South Graham.

### Water Works

**Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification.**

Ark., Walnut Ridge—City, reported, voted in favor of sale of water works to Municipal Telephone & Utilities Co., Kansas City, Mo.

Fla., St. Augustine—Preston Ayres, 56 N. Garland St., Orlando, reported, low bidder at \$11,000 for repairs and alterations water system at Camp J. Clifford R. Foster.

La., Shreveport—Fitzgerald Plumbing & Heating Co., 941 Louisiana Ave., reported, has contract for plumbing and heating for filtration plant and pumping station; Jack Moorman, 207 Crockett St., for light and power wiring.

Md., Baltimore—M. & J. B. McHugh, 3716 Sequoia Ave., have contract for trenches in Cold Spring Lane.

Mo., Cape Girardeau—City, reported, requested Missouri Utilities Co., subsidiary of Community Power and Light Co., Planters Bldg., St. Louis, to submit new plans and specifications for construction of filter plant.

N. C., Winston-Salem—City plans installing gasoline engine driven centrifugal pump at water works.

Okla., Claremore—City, reported, let contract to Garrett Construction Co., 412½ Court St., Muskogee, at \$100,280, for construction work on Dog Creek water project; W. B. Carter, Tulsa, has contract at \$31,229 and \$22,500 for pipeline and clear well; \$235,000 bonds available.

Okla., Oklahoma City—City, reported, plans voting on bonds for water works. See Financial News Columns.

Okla., Westville—City voted \$40,000 bonds for water and sanitary sewers; plans made with Public Service Co., to furnish water from spring 3 miles west of city.

Tex., Athens—City, John A. Spencer, Mayor, plans deep well, underground reservoir, etc., for water supply improvements; with storage capacity 150,000 gal.; cost \$25,000.

Tex., Beaumont—City, reported, plans constructing reservoir in south section of city, installing 12-in. line at intersection of Holmes and Bowie Sts.

Tex., Dallas—United States Pipe & Foundry Co., Birmingham, Ala., reported, has contract for 3000 tons 20 to 36-inch pipe.

Tex., Ft. Bliss—Ramey Bros., Mills Bldg., El Paso, reported, low bidder at \$16,662 for 600,000-gal. steel standpipe at Wm. Beaumont General Hospital.

Tex., Houston—Ed. S. McFarland submitted low bid at \$11,030 for constructing water mains radiating from East End plant to various additions of city.

Tex., Lovelady—See Sewer Construction.

Tex., Mineola—See Sewer Construction.

Tex., Temple—See Sewer Construction.

Va., Winchester—Stuart S. Perry has contract for filtration plant at Shawnee Springs, provide additional 800,000 gal. water supply.

W. Va., Richwood—Richwood Light and Water Co. expending \$50,000 for improvements to water storage; Chicago Bridge & Iron Works, Chicago, Ill., has contract for 200,000 gal. capacity steel reservoir; J. A. Tincher, Richwood, has contract for cone; lay 4800 gt. of 8-in. c. i. pipe and 3000 ft. of 4-in. pipe; hydrants, etc.

**Woodworking Plants**

Ky., Louisville—Wood Mosaic Co., William A. McLean, Pres. and Gen. Mgr., close down New Albany plant and transfer to main plant at Louisville; complete in 60 days.

Miss., Hazlehurst—Hazlehurst Box Factory, H. J. Wilson, advises regarding recent fire, did not lose sawmill or machinery; few thousand feet of rough lumber burned. (See Fire Damage, 7-3.)

Miss., Laurel—Charles P. Limbert Co., D. B. K. Van Raalte, Treas., broke ground for \$200,000 furniture plant; 100x1000 ft., L-shape, monitor type, install 12,000 panes glass; install new machinery, each machine equipped with electric motor; steam heat from high-pressure boiler capable of operating power plant should emergency arise; L. A. Gily, Laurel, has supervising contract; sub-contracts to be let for materials and labor; Ed. Freeback, Archt. 6-26

Mo., St. Louis—Weyandt-McCoole Casket Co., Inc., chartered; Charles H. Weyandt, 6308 S. Roseberry St.

S. C., Orangeburg — Anderson Plywood Corp., capital \$100,000, chartered; J. L. Anderson, Pres.; D. R. Anderson, Sec.-Treas.; manufacture veneer panels and plywood from hardwood and pine.

S. C., Orangeburg — Anderson Plywood Corp., capital \$100,000, incorporated; J. L. Anderson, D. R. Anderson.

## FIRE DAMAGE

Ark., Jonesboro — Buildings of Stevens Tire Co., Jonesboro Transfer & Storage Co. and Crowley Ridge Motor Co.; loss \$60,000.

Ky., Frankfort — Frankfort Chair Co.'s building in State Reformatory; loss \$250,000.

Ky., Louisville—Plant of H. H. Brenckmann Lumber Co., 517 S. Preston St.; houses at 513 and 523 S. Preston St., occupied by Lee Wallace, E. Graham; grocery store, 527 S. Preston St., occupied by Louis Prestiglomo; loss \$80,000.

La., Colfax—Store, residence and filling station of N. S. Roberts; loss \$13,000.

Miss., DeKalb—Lumber yard of J. A. Tratt Lumber Co.

Miss., Heidelberg—Cotton gin of Lynn Brothers.

Mo., St. Louis—Winstein Barrel Works, 1520 Monroe St.; loss \$13,000.

N. C., Burlington—F. J. Strader's wholesale house on Front St.

N. C., Lowell—D. W. Mitchem, Sr.'s business block, First St.

Tenn., Morristown—Hamblen County Motor Co.'s auto plant; loss \$50,000.

Tenn., Nashville—John W. Beasley's residence, 1305 Howard Ave.; loss \$8500; Dr. C. E. Kord's residence, adjoining, loss \$6000.

Tex., Corsicana—Beaton Bldg., occupied by City Tire & Bicycle Co., Sutherland Furniture Co., Marks Brothers and Mrs. Letha Britton's boarding house; loss \$50,000.

Tex., San Antonio—Dr. Irving T. Cutter's residence, Keller-Jackson Rd.; loss \$10,000.

W. Va., Middlebourne—Bower Lumber Co.'s plant and gasoline station; loss \$75,000.

ing; rein. conc. frame, conc. block and stucco, Quarry Key stone trim, old Cuban tile roof, tile floors on first floor, tile cloisters, steel windows, wrought iron grills and gates; Weed & Virruck, Archts., 2620 Biscayne Blvd. 7-3

Ga., Atlanta—Lindsey Hopkins, Healey Bldg., remodel residence, Paces Ferry Road; Cooper & Cooper, Archts., Forsyth Bldg.; bids in July 11.

Ga., Albany—John J. Watson, Pres., International Agriculture Corp., 61 Broadway, New York, remodel Colonial residence, etc., on estate at Hickory Grove near Albany; Dennis & Dennis, Archts., 556 Mulberry St., Macon, Ga.

La., Slidell—J. Mossler erect frame and stucco residence; 1 story, 64x36 ft.; Weiss, Dreyfous & Selfirth, Archts., Maison Blanche Bldg.; following contractors estimating; E. W. Ulrich Glass Co., 827 Dryades St.; J. A. Haase, Jr., 916 Union St.; C. N. Bott, Audubon Bldg., all New Orleans

Md., Baltimore—Dr. D. C. Wharton Smith, 17 Midvale Rd., plans \$50,000 residence, Homeland; stone, 2½ stories; Palmer & Lamdin, Archts., 513 N. Charles St.; nothing definite yet.

Md., Baltimore—Dr. Geo. G. Finney, 525 N. Wolfe St., received bids July 10 for \$45,000 residence, Green Spring Valley; stone, 2 stories and attic, L shape, 114x83 ft., hardwood floors, Puritan wood shingle roof; Palmer & Lamdin, Archts., 513 N. Charles St.

Oka., Oklahoma City—Harvey P. Everest, 418 W. Third St., erect \$35,000 Colonial residence; 2 stories; Schumacher & Winkler, Archts.; plans ready about Aug.

S. C., Chester—Robt. Latham erect brick veneer residence; slate roof; A. D. Gilchrist, Archt., Rock Hill; drawing plans.

S. C., Greenville—T. D. Wade erect duplex, Tindall Ave. and Augusta St.; may erect additional duplex or apartment house.

Tex., Beaumont—John K. Mason, 2570 North St., erect \$10,000 residence, 2370 Harrison St.; brick veneer, 2 stories, 8 rooms.

Tex., Houston—Harry L. Mott, 3325 Inwood St., erect Normandy type residence, Bellemeade Rd. and Del Monte Drive; drawing plans.

Tex., Houston—C. Nelch, 1215 Crawford St., has permit for \$10,000 residence, 2220 Riverside Drive; 8 rooms.

Tex., San Antonio—Mrs. Agatha, 343 Kings Highway, erect brick duplex, Rosewood Ave.; 2 stories, 12 rooms, metal lath; Chas. T. Boelhauwe, Archt., Aztec Bldg.

Va.-Tenn., Bristol — Henry Barker erect \$50,000 English type residence after plans by Geo. Mahan, Jr., City Savings Bank Bldg., and Everett Woods, 1099 Peabody St., Asso. Archts., Memphis; stone and tile, 1 story, 112x50 ft., hardwood floors, tile baths, comp. or tile roof. 5-29

Va., Staunton — W. B. Timberlake erect residence.

W. Va., Charleston—St. Johns P. E. Church, Rev. John Gass, Rector, Holley Hotel, erect \$20,000 rectory, Linden Ave., South Hills; brick, slate roof; bids about Aug. 1; Wysong & Bengston, Archts., Professional Bldg.

## Government and State

Ala., Union Springs—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids July 29 for 2-story and basement post office, about 3500 sq ft. ground area.

D. C., Washington—Supreme Court Building Coms., Chief Justice Chas. E. Hughes, Chmn., probably ask for bids within 4 months for \$8,240,000 Supreme Court Bldg., E. Capitol St., Maryland Ave., First and Second Sts.; bldgs. on site now being razed; House resolution authorizing David Lynn, Architect of the Capitol, to enter into contracts for excavation, foundation and constr.; Corinthian type, 385x304 ft., central section 4 stories, west front 3 stories and remaining sections lower; Supreme Court room 94 ft. square, about 30 ft. high; inclined driveway from basement, elevators, ventilation system, public and private corridors, law libraries on second and third floors; \$1,500,000 available for initial constr.; Cass Gilbert, Archt., 244 Madison Ave., New York. 4-10

D. C., Washington—Bureau of Standards, Purchase Section, has low bid from H. Herfurth, Jr., Dist. Natl. Bk. Bldg., to alter and erect additions to north bldg.; W. I. Deming, Archt., 808 Seventeenth St., N. W.; T. W. Marshall, Struct. Engr., 1341 Connecticut Ave. 6-26

## BUILDING NEWS

### BUILDINGS PROPOSED

#### Association and Fraternal

Ga., Valdosta — Valdosta Post No. 13, American Legion, Dr. E. H. Anderson, Commander, plans \$13,000 clubhouse; bids about Sept. 1; Lloyd Greer, Archt. See Want Section—Building Material and Equipment.

Md., Baltimore—Baltimore Forest No. 45, Tall Cedars of Lebanon, erect fireproof auditorium, rear of 1200-15 N. Charles St.; 1 story, 77.9x111 ft., \$100,000; architect not selected. Address Archie C. New, 2 E. Lexington St.

Miss., Picayune—American Legion, B. C. Cox, Commdr., having plans drawn for 128x40-ft. clubhouse.

Va., Richmond—United Daughters of Confederacy, Mrs. A. J. Montague, Pres., Bd. of Managers of Home for Needy Confederate Women, have plans completed during July for home; 100 bedrooms, 50 lavatories, memorial hall, dining rooms, solaria, offices, etc., on first floor; cost about \$250,000; Lee, Smith & Vandervoort, Archts., Sixth and Franklin Sts.

#### Bank and Office

Fla., Palm Beach—Palm Beach Co., Seaview Ave., erect \$30,000 to \$35,000 bldg. for main offices of E. F. Hutton Co., Breakers Bldg.; 1½ stories, 60 ft. front; Addison Mizner, Archt., 337 Worth Ave.

Fla., Winter Haven—American National Bank purchased First State Bank bldg.; remodel for quarters.

Oka., Oklahoma City—First National Bank & Trust Co., Hugh M. Johnson, Chmn., advises have not yet decided whether they will erect 30- to 36-story bank and office bldg. or lease property to construction company and then lease bank premises from them; if arrangements can not be made, bank may erect building. 5-1

S. C., Gaffney—Merchants & Planters National Bank, C. M. Smith, Pres., remodel interior.

Tenn., Manchester—First National Bank, reported, considers erecting building.

Tex., Eagle Pass—First National Bank, Geo. Hollis, Pres., about ready for bids to remodel and erect addition to bldg.; \$50,000; brick, conc. and steel, 2 stories; P. G. Silber & Co., Archts., Bedell Bldg.; Matthews & Kenan, Engrs., Smith-Young Tower, both San Antonio. 5-29

Va., Richmond—State Dept. of Motor Vehicles, T. McCall Frazier, Director, selected Carneal, Johnston & Wright, Electric Bldg., as architects to remodel old Planters National Bk. Bldg., Main and 12th Sts., for quarters; \$10,000. 4-24

#### Churches

D. C., Washington—Central Presbyterian Church, 15th and Irving Sts., N. W., R. W. Prince, member, 725 Thirteenth St., N. W., received bids July 9 for \$100,000 Sunday school; brick, 3 stories; Herbert L. Cain, Archt., Grace Securities Bldg., Richmond, 6-12

Tex., Austin—Ebenezer Baptist Church, Rev. J. C. Lott, Pastor, 902 E. 10th St., receives bids until July 15 for foundation and basement of Bldg.; rein. conc.; Roy L. Thomas, Archt., Littlefield Bldg.

Tex., Runge—Roman Catholic Church erect Bldg.; razing section of present structure.

#### City and County

Fla., Tampa—Spanish War Veterans, Edwin Murphy, 376 13th St., N. W., St. Petersburg, commander of Florida dept., requests city to appropriate \$25,000 for erection of bldg. for national headquarters.

Ga., Barnesville — Lamar County votes July 23 on \$70,000 courthouse bonds. 6-5

La., Many—Sabine Parish Police Jury, J. M. Abington, Sec., receives bids until July 22 for jail above courthouse; steam heat; plans on file with Clerk of Jury, at office C. H. Leinbach, Archt., Central Bk. Bldg., Dallas, Tex., and at office Ed George, Archt., Giddens-Lare Bldg., Shreveport, La. 5-29

Tex., Dumas—Moore County voted \$150,000 courthouse bonds. 6-12

Tex., Mineola — City, Jonathan Russell, Mayor, plans election on \$25,000 city hall bonds.

#### Dwellings

D. C., Washington—C. W. Williams, 443 Fourth St., N. E., has permit for 2 brick dwellings, 711-13 Nicholson St., N. W.; 2 stories; \$14,000.

D. C., Washington—John D. Lane, 1321 G St., N. W., erect \$10,000, 2-story, brick and tile residence, 3804 Garfield St.

D. C., Washington—Waverly Taylor, 1522 K St., N. W., erect twelve brick and stone dwellings, 1514-24 Fourteenth St. and 4400-10 Volta Place; \$135,000.

D. C., Washington—Henry J. Connor, 3221 Connecticut Ave., N. W., erect \$10,000, 2½-story, brick and hollow tile residence, 1325 Jonquil St., N. W.

Fla., Miami—Frank O'Neill, Pres., O'Neill Machine Co., Toledo, O., soon start work on Mediterranean type winter residence, Indian Creek and Pine Tree Drives; \$75,000, exclusive of landscaping, seawall and boat and-

Ga., Fort McPherson, Atlanta—Constructing Quartermaster, Fort McPherson, Capt. R. T. Edwards, has low bid at \$9000 from J. F. Holley Construction Co., Ensley, Ala., for addition to hospital; brick, conc. footings, comp. roof.

Ga., Fort Valley—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., plans \$85,000 post office.

Ga., Savannah—Additional contractors estimating on extension and remodeling (except elevators) of post office and courthouse, bids July 14 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.; English Construction Co., 15 W. 91st St., New York, and 1737 Paulina St., Chicago, Ill.; W. D. Lowell, 1415 Eighth St., S. E., Minneapolis, Minn.; North-Eastern Construction Co., Nissen Bldg., Winston-Salem, N. C.; Murphrey Pound, Swift-Kyle Bldg., N. B. Nelson, 1934 Broadway, both of Columbus, Ga.; Wm. MacDonald Construction Co., Synd. Tr. Bldg.; Murch Bros. Construction Co., Ry. Exch. Bldg., both St. Louis, Mo.; Claussen-Lawrence Construction Co., 1394 Gwinnett St., Augusta, Ga.; Ebenezer Morgan, Ott St.; T. R. Worrell, 101 E. 40th St.; Farquhar McRae, 25 W. Oglethorpe Ave.; Smythe & Co., 1418 F St., N. W., Washington; Kellogg & Anderson, Taylor, Tex.; W. E. Rowan, Builder's Bldg., Charlotte, N. C.; Fayette Construction Co., 500 W. Short St., Lexington, Ky.; W. P. Rose Co., Wayne Natl. Bank Bldg., Goldsboro, N. C.

La., Bogalusa—Following contractors estimating on \$130,000 post office, bids July 18 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.: H. J. Cowgill; A. Leblanc & Son, both Bogalusa; Algernon Blair, First Natl. Bank Bldg.; Samford Bros., Inc., 301 Washington Ave., both Montgomery, Ala.; R. P. Farnsworth & Co., Inc., Maritime Bldg.; J. V. & R. T. Burkes, Amer. Bk. Bldg.; Lionel F. Favret, Louisiana Bldg.; H. Pratt Farnsworth, Canal Bk. Bldg.; H. W. Bond & Bro., 1019 Constantinople St.; O. M. Gwin Construction Co., 3501 Fern St.; all New Orleans, La.; Tudor & Ratcliffe, Commercial Bank Bldg., Alexandria, La.; J. F. Holley Construction Co., 730 Nineteenth St., Ensley, Ala.; Dye & Mullings, Columbia, Miss.; Wm. McDonald Construction Co., Synd. Tr. Bldg., St. Louis, Mo.; Murphrey Pound, Swift-Kyle Bldg.; H. B. Nelson Construction Co., 1034 Broadway, both Columbus, Ga.; Chas. Weltz Sons, 713 Mulberry St., Des Moines, Iowa; Newport Contracting & Engineering Co., Inc., Lee Hall, Va.; J. M. Raymond Construction Co., Hildebrand Bldg., Jacksonville, Fla.; J. N. Boston & Sons, Marion, Ky.; R. F. Ball Construction Co., 806½ Taylor St., Fort Worth, Tex.

Maryland—Sub-committee of Governor's Comm., having preliminary plans drawn by Henry Powell Hopkins, Archt., 345 N. Charles St., Baltimore, Md., for almshouse on Eastern Shore, to serve 9 counties; tentative plans call for cottage constr., 2 bldgs. for whites, 2 for negroes, 1 for administration purposes and 1 for power house, etc.; accommodate 200.

Md., Baltimore—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., has low bid at \$27,000 from Newman Manufacturing Co., Cleaney St. and N. W. Ry., Cincinnati, O., for special lighting fix. Co., Gen. Contr., 222 W. Adams St., Chicago, Ill.

Miss., Greenwood—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids July 28 for extension and remodeling of post office; \$90,000.

Tenn., Clarksville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids July 30 for remodeling and enlarging postoffice.

Tenn., Elizabethton—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., reported, call for bids during July for site for post office.

Tex., Randolph Field, Schertz—Constructing Quartermaster, Capt. A. W. Parker, has low bids for following: (1) Academic bldg., \$86,740 from L. T. Wright & Co., Builders Exch. Bldg., for conc. frame, and at \$93,250 from John Westerhoff, Milam Bldg., for steel frame, both San Antonio, Tex.; (2) administration bldg. at \$209,000 from Murch Bros. Construction Co., Ry. Exch. Bldg., St. Louis, Mo.; plumbing and heating at \$30,370 from Kirkwood & Wharton, 523 N. Flores St., and wiring at \$8633 from Martin Wright Electric Co., 1001 Navarro St.; elevators, Otis Elevator Co., 108 Navarro St., at \$5000, all San Antonio; (3) 1 operations and 1 parachute bldg. at \$74,780 from Sumner-Sollitt Co., National Bank of Commerce Bldg., San Antonio; (4) Air Corps shops at 7142,414

from L. T. Wright & Co., San Antonio; (1) Ralph Cameron, Archt., Majestic Bldg.; W. E. Simpson Co., Engr., Milam Bldg.; (2) Atlee B. & Robt. M. Ayres, Archts., Smith-Young Tower; W. E. Simpson Co., Engr.; (4) Henry T. Phelps, Archt., Hicks Bldg.; W. E. Simpson Co., Engr.; all San Antonio.

Va., Alexandria—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., has low bid at \$229,000 from Beaman-Coleman Construction Co., Lawyer's Bldg., Raleigh, N. C., for bids for custom house, post office, etc.; low bid for elevator at \$6,750 from Westbrook Elevator Manufacturing Co., Spring St., Danville, Va.

#### Hospitals, Sanitariums, Etc.

D. C., Washington—Constructing Quartermaster, Army Medical Center, has low bid at \$304,000 from George E. Wyne, 2525 Pennsylvania Ave., N. W., for center unit of nurses' quarters, and utilities, Walter Reed General Hospital; expect to award contract in few days.

Ga., Columbus—City, H. B. Crawford, City Mgr., receives bids July 21 for \$150,000 hospital addition; fireproof, rein. conc., brick, stone trim, 3 stories and basement, tile, comp. and terrazzo floors, comp. built-up roof, steam heat; E. C. Wachendorff, Archt., Standard Bldg., Atlanta; T. F. Lockwood, Asso. Archt., Murray Bldg., Columbus.

Ga., Columbus—City, H. B. Crawford, Mgr., receives bids July 21 for general work, plumbing, heating, electrical, elevator and lift and kitchen and other equipment for additions and alterations to City Hospital; \$150,000, 3 stories and basement, brick, stone trim, fireproof, tile, comp. and terrazzo floors, comp. built-up roof, steam heat; plans from E. C. Wachendorff, Archt., Standard Bldg., Atlanta, and at office T. F. Lockwood, Asso. Archt., Murray Bldg., Columbus.

N. C., Sanford—Lee County Hospital Bd. of Trustees selected Eric G. Flanagan, Henderson, as architect for \$62,500 hospital.

Tenn., Nashville—City, Hilary E. Howse, Mayor, voted \$500,000 to remodel and enlarge Nashville General Hospital.

Tex., Sanatorium—State Bd. of Control, Claude D. Teer, Chmn., Austin, plans following at State Tuberculosis Sanatorium, Dr. J. B. McKnight, Supt.: \$25,000 ice plant and machine shop, \$25,000 pavilion, \$15,000 addition to laundry, \$10,000; enlargement of sewage disposal plant and \$10,000 road and lighting work.

Tex., Wichita Falls—State Bd. of Control, Austin, receives bids July 14 for industrial bldg. addition, Wichita Falls State Hospital; fireproof, 2 stories, 48x33 ft., rein. conc., built-up roof; Voelcker & Dixon, Archts., Perkins-Snider Bldg., Wichita Falls.

Va., Alexandria—Alexandria Hospital, Mayor Robert S. Jones, Pres., Bd. of Directors, plans \$150,000 campaign in Fall to erect annex.

Va., Richmond—Stuart Circle Hospital Corp. open bids about last of Aug. for fireproof nurses' home; \$100,000, 3 stories, 70x80 ft., conc. floors on bar joist, conc. foundation, comp. roof; plans by Chas. M. Robinson, Architects, Times-Dispatch Bldg.

Va., Richmond—Virginia Home for Incurables received bids July 10 for 7-story bldg., Powhatan and Appomattox Sts.; fireproof, brick, 199x80 ft., porch 106 ft. long, sun parlors on each floor, running water in each room; accommodate 100; 2-story servants' quarters; Baskerville & Lambert, Archts., Central Natl. Bank Bldg.

#### Hotels and Apartments

Ark., Russellville—John H. Ganner soon ready for bids for 4-family apartment; brick, stucco and half timber, hardwood floors, tile baths, built-in kitchen units, electric refrigerator; Erhart & Eichenbaum, Archts., 113½ W. Third St., Little Rock.

D. C., Washington—Clarence W. Gosnell, 1727 K St., N. W., has permit for \$9000 brick and tile, 4-family flat, 1630 D St., S. W.; also \$4500 flat, 1628 D St., S. E.

Tex., Beeville—Malcolm G. Simons, Archt., Builders Exch. Bldg., San Antonio, preparing plans for 8-story and basement, brick, rein. conc. and stone, 125-room McKinney Hotel.

Tex., Dallas—W. A. Randolph, 6334 Velasco St., has permit for thirty-five 2-story, 10-room brick apartments, Ross Ave. and Elliott St.; \$20,000.

Tex., Grand Saline—M. Salzberg, 507 Lipscomb St., Fort Worth, soon start work on \$25,000 hotel and several two and three-room houses for tourists.

Tex., Spearman—S. B. Hale and associates interested in erection of 40-room hotel.

#### Miscellaneous

Fla., New Smyrna—New Smyrna Yacht Club, N. A. Hotard, Sec., erect \$15,000, 96x125 ft. club building; H. M. Griffin, Archt., 205 N. Grandview Ave., Daytona Beach; bids in.

Ky., Louisville—St. Benedict's Church, Bishop John A. Floersh, 2309 Osage Ave., has permit for \$20,000, 2-story home for nuns.

Ola., Oklahoma City—Oklahoma City Athletic Club, H. V. Trigg, Gen. Dir., plans to start work in 90 days on \$1,250,000 building; plans by Walter T. Vahlberg, Braniff Bldg., Archt. and one of directors of club, call for 12-story structure and will include dining rooms, gymnasiums, ball room, auditorium to seat 5000 people.

Tex., Denton—Denton County Fair Assn., Dr. Jack Skiles, Pres., erect several buildings.

#### Schools

Ala., University—Kappa Nu Fraternity, University of Alabama, soon call for bids for \$35,000, 2-story and basement, 68x73 ft., brick veneer fraternity house; comp. shingle roof, hard wood and tile floors, steam heat; Miller & Martin, Archts., Title Guarantee Bldg., Birmingham.

Ark., Little Rock—School Bd., W. E. Phipps, Supt., erect 4-classroom, basement and auditorium addition to Rose City school; auditorium to seat several hundred people; 2-room and auditorium addition at Park Hill School; also addition to Baring Cross school; bids in.

Ga., Jackson—Butts County Bd. of Education plans school in Iron Springs Consolidated Dist.

Ky., Barbourville—Knox County and Barbourville Boards of Education erect 8-room Julius Rosenwald School for negro students.

La., Istrouma—East Baton Rouge Parish School Bd., Baton Rouge, complete Hollywood School, erect Monte Sano School, enlarge North Highlands and Fairfield Schools; enlarge Istrouma School and erect elementary school in Istrouma.

La., Loranger—Tangipahoa Parish School Bd., W. J. Dunn, Supt., Amite, receives bids Aug. 5 for \$25,000, 1-story, 90x100 ft. brick veneer school; asbestos comp. roof, wood floors; Favrot & Livaudais, Archts., Hibbert Bank Bldg., New Orleans.

La., Monroe—Ouachita Parish School Bd., T. O. Brown, Sec., has low bid at \$417,470 from Tudor & Ratcliff, Commercial Bank Bldg., Alexandria, for 3-story and basement, rein. conc. brick and limestone trim high school; plumbing, heating and wiring, \$128,500. Robinson Brothers, 1214 W. Barr St., Pine Bluff, Ark.; J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg.

La., Mt. Hermon—Washington Parish School Bd., D. H. Stringfield, Sec., Franklin, receives bids July 31 for \$15,000, 1-story brick school for Mt. Hermon-Sunny Hill Consolidated School Dist. No. 5.

La., Ruston—Lincoln Parish School Bd., H. L. Campbell, Supt., plans school building; election July 28 on \$10,000 bonds.

Md., Baltimore—Friends School, W. S. Pike, Park Ave. and Laurens St., having plans prepared by Mottu & White, 527 N. Charles St., for \$60,000, 1-story, stone gymnasium, Charles St. Ave. near Wynnehurst Ave.

Md., Union Bridge—M. S. H. Unger, Supt. of Carroll County School Comms., advises that building will not be erected at Union Bridge during next year. Recently reported having plans prepared for \$75,000 high school.

Miss., Gulfport—Gulf Parks College erect \$15,000 brick and stucco addition to administration building; Shaw & Woleben, Archts.; bids in.

Mo., Clayton, St. Louis—Bd. of Education, Mrs. V. W. Kern, Sec., 7500 Henderson Ave., receives bids July 15 for \$225,000, 2-story, brick Maryland Grade school; Wm. B. Ittner, 911 Locust St.

Mo., Holcomb—Holcomb Consolidated School Dist. plans \$10,000 bond election.

Mo., St. Louis—St. Louis University, Rev. Jos. L. Davis, Sec., having plans prepared by Henry P. Hess, Ambassador Bldg., for \$400,000, 4-story, brick School of Commerce and Finance.

Mo., Union Star—Bd. of Education, Geo. D. Gross, receives bids July 17 for \$23,000, 1-story and basement, 70x78 ft., brick and frame school addition; H. D. Pampel, Archt., Finance Bldg., Kansas City.

N. C., Greensboro—Guilford County Bd. of Education, T. R. Foust, Supt., receives bids July 12 for \$15,000, 1-story, brick veneer, 4-room Mt. Zion negro school, one mile northeast of city; Harry J. Simmons, Archt., Jefferson Standard Bldg.

N. C., Salisbury—Livingston College, Wm. J. Trent, Pres., soon ready for bids for \$100,000, 2-story and basement, 158x77 ft., brick, J. G. Price Memorial Bldg.; conc. and hardwood floors, cast stone and Indiana limestone trim, tin roof with alternate on Buckingham slate; Hentz, Adler & Shutze and Ivey & Crook, Archts., Candler Bldg., Atlanta, Ga.; Willard G. Rogers, Asso. Archt., Salisbury, and 510 E Boulevard, Charlotte. 6-19

Okla., Fargo—Bd. of Education, A. W. Benbrook, Sec., erect \$25,000, 1-story, 54x101 ft., brick school; Roy W. Shaw, Archt., Enid.

Okla., Frederick—Bd. of Education has low bid at \$24,900 from F. H. Daggs, Hollis, for 1-story 51x191 ft., brick and tile school; W. J. Laws & Co., Archts., First Nat'l. Bank Bldg., Oklahoma City. 6-19

Okla., Holdenville—Bd. of Education, R. E. Penney, Clk., having plans prepared by Tonini & Bramblett, Archts., 416½ W. Main St., Oklahoma City, for \$20,000, 1-story brick and stone, 4-classroom grade school. 6-5

Okla., Oklahoma City—Bd. of Education, J. G. Stearley, Clk., erect \$115,000, 10-room school for Shidler Dist.; Leonard Bailey, Archt., Colcord Bldg.; also erect building to be known as Stan Watie School; Walter T. Vahlberg, Archt., Braniff Bldg.; bids in. 3-6

Okla., Stillwater—Oklahoma Agricultural and Mechanical College, Dr. H. G. Bennett, Pres., having plans prepared by Philip A. Wilber for \$500,000 stadium and field house. 2-27

S. C., Columbia—Bd. of School Comsn., Frank C. Withers, Chmn., erect 1-story and basement, brick, stone trim grammar school, Waccamaw Ave. and Altee St.; comp. roof; Jas. B. Urquhart, Archt., Central Union Bldg.

S. C., Columbia—University of South Carolina selected J. Carroll Johnson, Sylvan Bldg., to prepare plans for proposed \$300,000 education and demonstration high school; brick and stucco; accommodate 300 pupils; ready for bids in Aug. 5-29

Tenn., Knoxville—City, George Dempster, Mgr., abandoned plan to build \$600,000 joint City-County-University auditorium on U-T property on Temple Ave.; decided not to vote Aug. 7 on \$300,000 auditorium bond issue; University of Tennessee, Dr. H. A. Morgan, Pres., erect \$250,000, 2-story and basement, rein. conc., brick and tile, stone trim gymnasium; seat 4500 people; Barber & McMurry, Archts., Guarantee Bldg. 6-5

Tex., Austin—University of Texas, J. W. Calhoun, Comptroller, having plans prepared by Herbert M. Greene, LaRoche & Dahl, Construction Industries Bldg., Dallas, for \$500,000 library building and \$400,000 classroom building, brick, stone and rein. conc. 12-26-29

Tex., Frederickburg—School Bd. ready for bids in about 2 weeks for \$50,000 school; 7 classrooms, auditorium and gymnasium; Edward Stein, Archt. 7-3

Tex., Gainesville—Bd. of Education plans school in first ward; \$55,000 bonds voted.

Tex., Mathis—Mathis Ind. School Dist. Trustees erect high school, 4-room grade school and remodel present building; \$75,000 bonds voted; Olin Boese, Archt.; Morris & Noonan, Asso. Archts., both Builders Exchange Bldg.; Lloyd D. Royer, Mech. Engr., Smith-Young Tower, all San Antonio.

Tex., Menard—Menard Ind. School Dist., Jim Smith, Pres., School Bd., having plans prepared by Arthur Swartz, San Angelo, for \$50,000 high school.

Tex., San Angelo—San Angelo Ind. School Dist., Felix E. Smith, Supt., erect \$75,000, 2-story, brick and rein. conc. 4-room addition to school; Anton F. Korn, Jr., Thomas Bldg., Dallas, and C. C. Alexander, San Angelo Nat'l. Bank Bldg., San Angelo, Asso. Archts.; bids in. 6-12

Tex., San Antonio—Bd. of Education, J. A. McIntosh, Pres., has low bid at \$56,000 from Rheiner & Kroeger, 306 Wyoming St., for brick and rein. conc. auditorium addition to Ralph Waldo Emerson Jr. School; Leo M. J. Diehlmann, Archt., 306 E. Commerce St.; Phelps & Dewees, School Archts., Gunter Bldg. 6-12

Va., Ballston—Arlington County Bd. of Education, Rosslyn, erect 33-room addition to Washington and Lee High School; \$250,000; plans by Raymond Long, Archt. for State Bd. of Education, Richmond; bids in. 6-19

Va., Pearisburg—Giles County School Bd. receives bids July 14 for school at Big Stoney Creek; plans by Raymond Long, Archt. for State Bd. of Education, Richmond.

Va., Richmond—Medical College of Virginia, Dr. W. T. Sanger, Pres., call for bids in about 60 days for \$120,000, 6-story, steel frame and brick, fireproof dormitory and educational unit for St. Philip Hospital School of Nursing; Baskerville & Lambert, Archts., Central Nat'l. Bank Bldg.

Va., University—University of Virginia, Dr. Edwin A. Alderman, Pres., erect \$175,000 Nurses' Home; plans ready about last of July; \$75,000 addition to Chemical Laboratory; plans complete about Aug. 15; \$250,000 Clark Memorial Law Bldg.; plans ready in fall; plans by Architectural Comsn. composed of Walter D. Blair, 154 E. 61st St., New York; R. E. Lee Taylor, Baltimore Trust Bldg., Baltimore; Edmund S. Campbell, Prof. of Architecture, University of Virginia; and John Kean Peebles, 1111 W. Princess Anne Rd., Norfolk. 7-3

Va., Virginia Beach—Atlantic University, Dr. Wm. Moseley Brown, Pres., announced that original plan to erect first unit on temporary site has been abandoned and decision has been reached to proceed with construction program on permanent site; plans purchasing 300-acre site and erecting two buildings as first unit; construction work on temporary building has been halted; Haycox Concrete Corp., Contr., 432 W. 21st St., Norfolk; Laurence B. Emmons, Archt., 117 E. 60th St., New York. 6-26

W. Va., Montcoal—Marsh Fork School Dist. Trustees erect \$40,000, 2-story, 80x45 ft., brick and hollow tile, 4-classroom, auditorium and gymnasium addition to high school; Walter F. Martens, Archt., Masonic Bldg., Charleston.

### Stores

D. C., Washington—Anna Carry, 1870 Wyoming Ave., N. W., has permit for \$10,000, 2-story brick store, 501 H St., N. E.

D. C., Washington—Robert Beresford, Archt., 1115 Connecticut Ave., N. W., preparing plans for remodeling building, 1415 H St., N. W., for offices and storerooms.

D. C., Washington—Washington Building Realty Corp. make new entrances and remodel space in Washington Bldg., 15th and New York Ave., for a Parker-Bridget Co., Seventh Ave. and Ninth St., clothiers; \$80,000.

Fla., Miami Beach—Mr. Coakley, care August Geiger, 58 S. E. Seventh St., Miami, erect 1-story, rein. conc., conc. block and stucco store building, Collins and 30th St.

La., Shreveport—E. A. George, Archt., prepared plans for 1-story, 35x65 ft., brick building, 1105 Fannin St.; bids in.

Md., Baltimore—Helwig & Leitch Corp., 1533 Gorsuch Ave., remodel and erect addition to 3-story brick building; Owens & Sisco, Archts., Continental Bldg.; bids in.

Md., Baltimore—Arthur O. Kruger, 12 S. Calvert St., leased building, 225 E. Baltimore St., and remodel for restaurant and

## BUILDING CONTRACTS AWARDED

### Bank and Office

Mo., St. Louis—Pythian Building Co., Grand Ave. and Delmar Blvd., alter first floor bank in bldg., 101 N. Grand; \$14,000; Mauran, Russell & Crowell, Archts., Chemical Bldg.; Westlake Construction Co., Contr., Ry. Exch. Bldg.

Va., Lynchburg—E. C. Ivey, Jr., 2018 Rivermont Ave., will be president of corp. being formed to erect 16-story Allied Arts Bldg., Eighth and Church Sts.; fireproof, 42x132 ft., high-speed elevators; 2 stories; garage adjoining to accommodate 100 cars; Stanhope S. Johnson, Brookside Farm, and R. O. Brannon, Peoples Nat'l. Bank Bldg., Archts.; C. W. Hancock & Sons, Contrs., Krise Bldg. 5-29

Va., Richmond—Fifth District Federal Reserve Bank of Richmond, Geo. W. Seay, Gov., let contract at \$554,000 to J. A. Jones Construction Co., Commercial Bank Bldg., Charlotte, N. C., for \$700,000 to \$800,000 addition, Ninth and Franklin Sts.; 70x120 ft.; connected with present building by colonnade; Taylor & Fisher, Archts., Baltimore Trust Bldg., Baltimore. 6-19

### Churches

D. C., Washington—Protestant Episcopal Cathedral Foundation signed contract for erection of entire north transept of \$100,000 Washington Cathedral under construction; \$1,147,000; Frohman, Robb and

soda fountain; install spiral stairway, kitchen equipment; \$18,000; Wm. Ganter & Associates, Archts., Knickerbocker Bldg.; 3 upper floors to be leased by Lucas Bros., 219-23 E. Baltimore St.

Tenn., Chattanooga—Fred Robinson, 709 Chestnut St., erect brick store on Georgia Ave.; stone trim, comp. roof; W. H. Sears, Archt., James Bldg.

Tex., Dallas—F. J. Woerner & Co., Archts., Central Bank Bldg., prepared plans for 40x100 ft., terra cotta, stone trim store, 213 W. Jefferson Ave., to be leased to Harry I. Freedman, of Brown Shoe Co., 1600 Washington St., St. Louis.

Tex., Dallas—F. J. Woerner & Co., Archts., Central Bank Bldg., prepared plans for 4-store building, Bryan St. and Haskell Ave.; corner space to be leased to A. C. Smith, of Sun Drug Co., 1405 N. Haskell St., who will install pharmacy and soda fountain.

Tex., Dallas—Mrs. W. S. Keating has permit for brick store buildings, 3300-06 Knox St.; \$12,000.

Tex., Houston—W. J. McKenzie, 815 E St., has permit for \$15,000 steel frame and brick building, 36 Elm St.

Va., Norfolk—Grandy Estate, C. W. Grandy, Nat'l. Bank of Commerce Bldg., considering erecting 2-story arcade from Plume to Main St.; Caliro, Browne & FitzGibbon, Archts., Royston Bldg.

### Theatres

D. C., Washington—Warner Bros. Pictures, Inc., John J. Payette, Gen. Mgr., Washington Circuit, New Jersey Ave. and K St., N. W., having plans prepared by Rapp & Rapp, Paramount Bldg., New York, for theater on site Apollo Theater, 624 H St., N. E.; seat 2500 people; 5 stores on ground floor. 5-1

Fla., Jacksonville—C. M. Lewis, 2165 Montague Terrace, soon let contract for improvements and additions to theatre on Ashley St.; Jefferson D. Powell, Archt., St. James Bldg.; contractors estimating: George Hessler Construction Co.; A. L. Clayton, Blum Bldg.; O. P. Woodcock, Duval Bldg.; J. L. Ponder, 3380 Knight St.; N. L. Snelson; Arthur Perry, Bisbee Bldg.; H. S. Baird, Atlantic Nat'l. Bank Bldg., all Jacksonville.

### Warehouses

Ky., Lexington—Liggett & Myers Tobacco Co., 4241 Folson St., St. Louis, Mo., erect \$100,000, brick and conc. storage tobacco warehouse on Manchester St.

Md., Baltimore—Stewart & Co., Thomas P. Abbott, Pres., Howard and Lexington Sts., having plans revised by Joseph Evans Sperry, Calvert Bldg., and call for bids in about 3 weeks for \$200,000, 2-story, steel and brick delivery warehouse and 40-car garage, 641 W. Saratoga St. 4-24

Mo., Jefferson City—State Highway Comsn. of Missouri, T. H. Cutler, Ch. Engr., receives bids July 21 for record storage building and headquarters garage.

Little, Archts., 140 Boylston St., Boston, Mass., and 19 Jackson Place, Washington; Geo. A. Fuller Co., Contr., Munsey Bldg., Washington. 12-19

Ky., Louisville—Highland Presbyterian Church let contract to J. F. Russell & Co., Brook and Bloom Sts., to remodel bldg., 1001 Cherokee Rd.; Nevin, Morgan & Kolb, Archts., Starks Bldg.

La., New Orleans—St. Francis of Assisi R. C. Church let contract at \$70,271 to A. M. Fromherz, Q. & C. Bldg., to complete interior; wood carving, plastering, millwork, steam heat; erect brick and rein. conc. slab boiler house with slate roof and sheet metal work; Diboll & Owen, Ltd., Archts., Canal Bk. Bldg. 5-22

Md., Chewsville—United Brethren Church, Main St., Rev. P. Cooper, Pastor, started work on addition to and remodeling of church; \$20,000, brick, 1 story; W. Y. Royer, Archt., 36 E. Market St., York, Pa.; N. S. Early, Contr., 609 Frederick St., Hagerstown, Md.

Md., Silver Spring—Protestant Episcopal Church let contract to T. T. Taylor Co., 1406 G St., N. W., Washington, for \$45,000, stone bldg.; 1 story and basement, auditorium 36x117 ft., two 20x16-ft. wings in rear, hardwood floors, cypress choir loft, slate roof; Howard W. Cutler, Archt., 1800 E St., N. W., Washington. 3-13

Okla., Tulsa—Fundamentalist Baptist Church organized Rev. Grover Cleveland,

Pastor, 158 N. Delaware Place; started work on tabernacle, E. Admiral Blvd. and Gary Ave.

Tex., Nacogdoches—Westminster Presbyterian Church, F. S. Aikman, Chmn. of Bd., let contract for \$35,000 bldg. to W. A. Foster, Lufkin; 2-story Sunday school section; Shirley Simons, Archt., Tyler.

### City and County

Ala., Montgomery—City, W. A. Gunter, Mayor, let contract at \$11,400 to Jehle Bros. for fire station, Fairview and Agnew Sts., Cloverdale; brick, 1 story; Howard Austin, Archt., Shepherd Bldg.

Okla., Watonga—City let contract for \$40,000 city hall to McMillen & Shelton, Enid; brick, 2 stories; R. W. Shaw, Archt., Enid.

S. C., Honea Path—City let contract to C. M. Guest & Son, Sharpe St., Anderson, for \$17,000 city hall and fire dept. bldg.; fireproof, 2 stories, 45.6x40 ft., comp. roof; S. M. Cathcart, Archt., N. Main St.

Va., Harrisonburg—Rockingham County started remodeling and fireproofing courthouse; \$82,000; furnishing, equipment, etc., \$5,000; structure 4 stories, 71x116 ft., metal pan conc. floors; C. H. Hinnant, Archt., Peoples Natl. Bank Bldg., Spring St., Lynchburg; elevator, Westbrook Elevator Mfg. Co., Danville. See Want Section—Building Material and Equipment.

### Dwellings

Ala., Birmingham—Fredk. J. Sertell, 307 Poinciana Drive, Hollywood, erect brick veneer residence, Mayfair, Roxbury Rd.; stone trim, 1 story, 64x34 ft., comp. roof, hot air heat; Mackie Building Co., Contr., 615 S. 27th St., Birmingham.

Ala., Montgomery—Col. W. P. Screws, 3 LeGrand Place, erect \$15,000 brick veneer residence, Fairview Ave. near Gilmer St.; 2 stories, tile roof, steam heat; Cramton Lumber Co., Contr., 210 Pollard St.

Ala., Tuscaloosa—Edw. Rosenfield let contract to D. D. McLeod for brick veneer residence; 2 stories, 50x55 ft.; Wm. Leslie Welton, Archt., Amer. Tr. Bldg., Birmingham.

Ark., Little Rock—Fourche River Land Co., 213½ W. Second St., erect fireproof steel and brick dwelling, 1800 block Fair Park Blvd.; 2 stories, basement and attic, rein. conc. and cork floors, stone foundation, French tile roof; work start in few days.

D. C., Washington—L. E. Breininger & Sons, Inc., Investment Bldg., erect \$10,000, 2½-story, brick dwelling, 1346 Hemlock St., N. W.

Fla., Boca Raton—Spanish River Land Co., C. Geist, Pres., Packard Bldg., Philadelphia, Pa., and Boca Raton, let contract at about \$97,990 to St. John Construction Co., 629 Seventh St., N. W., Miami, for 2 dwellings; Marion Sims Wyeth, Archt., Wyeth Bldg., Palm Beach.

Fla., Miami Beach—Fred Tod, 5197 Collins Ave., erect \$25,000 porch and loggia addition to residence; rein. conc. conc. block and stucco, tile floors, tile roof; Robt. A. Taylor, Archt., Spanish Village, Espanola Way; J. C. Gaffney, Inc., Contr., 708 Collins Ave.

Fla., Miami Beach—B. F. Schonberg erect 4 rein. conc. conc. block and stucco dwellings, Third St. and Alton Rd.; \$16,000; C. E. Haley, Contr., Seybold Bldg., Miami.

Fla., Miami Beach—Mrs. Raymond C. Penfield, care Archts., let contract to Jesse P. Montz, 8238 N. E. Ninth Ave., for rein. conc. conc. block and stucco residence, 5005 Apache Drive; 85x52 ft.; Carlos B. Schoeppl, 528 Lincoln Rd., Miami Beach, and John & Coulton Skinner, French Village, LeJeune Rd., Coral Gables, Archts.

Ga., Atlanta—Hoke Smith, Grant Bldg., let contract to Wagar & Co., Norris Bldg., for brick residence; hollow tile, Indiana limestone trim, 2 stories and basement, 89x31 ft., Buckingham slate roof; Pringle & Smith, Archts., Norris Bldg.

Ga., Atlanta—Paul Arnold, 985 Forest Rd., N. E., started work on \$25,000, 2-story and basement, brick residence on Springdale Road, Druid Hills; hardwood and tile floors; T. R. Benning, Contr., Haas-Howell Bldg.

Ga., LaGrange—Eley R. Callaway erect brick residence; 2 stories and basement, steam heat; Ivey & Crook, Archts., Candler Bldg., Atlanta; Newman Lumber Co., Contr., LaGrange.

La., New Iberia—Judge Arthur Provost erect residence, St. Peter and French Sts.; Owen Southwell, Archt.; Xavier Herpeche, Contr.

La., New Orleans—B. A. Russ, Contr., 4 Paladin Place, erect single stucco dwelling, Franklin Ave. and Lavender St.; Spanish type, rein. steel, orna. iron, hardwood floors.

La., New Orleans—Mrs. Louis C. Thomas erect 2-story frame residence and garage, St. Charles Ave. and Philip St.; 58x41 ft., comp. and tile roof, \$100,000; Paul G. Charbonnet, Contr., 830 Union St.

La., New Orleans—Mrs. M. Daffon, 5929 Catina St., erect duplex, 5525-27 Catina St.; Philip Schmeller, Contr., 4141 Orleans St.

Md., Baltimore—Warren Black, Pier 2, Pratt St., let contract to Jas L. Hooper, 5533 Gwynn Oak Ave., for \$10,000 frame residence, 329 Tunbridge Rd.; 2 stories, 33x31.6 ft. and 20x29 ft., slate roof, hot water heat; J. Winthrop Wolcott, Archt., 324 N. Charles St.

Md., Baltimore—E. J. McGraw, Bldr., 306 Tunbridge Road, erect \$10,000 stone dwelling, 235 Chancery Rd., Guilford.

Mo., Kansas City—Safety Building Co., R. J. Thompson, Pres., started work on second unit of 14 duplexes, Ward and Flora Aves.; 4 completed.

Mo., University City, St. Louis—Advance Realty & Building Co., 7217 Princeton St., erect \$10,000 dwelling and garage, 7391 Norwood St.; brick, 2 stories, 37.10x31 ft., conc. block foundation, tile roof, hot water heat; plans and constr. by owner.

Mo., Webster Groves—O. M. Chapman, 424 E. Big Bend Blvd., will let contract to Parcell Quick, Big Bend Rd., Webster Groves, for brick residence, Blackmer Place; 2 stories, 46x39 ft., hardwood and rubber floors, conc. block foundation, slate roof; E. E. Christopher, Archt., Louderman Bldg., St. Louis. See Want Section—Building Material and Equipment.

N. C., Wilmington—Geo. W. Kidder, 313 Ann St., let contract to C. E. Morton, 207 Church St., for brick and cast stone trim residence; 3 stories and basement, oak floors, rein. conc. floor slab, slate roof; Atwood & Nash, Inc., Archts., Chapel Hill.

Okla., Stillwater—A. E. Scroggs started work on \$15,000 residence; brick veneer, 2 stories and part basement, 40x50 ft.; day labor.

Oklahoma, Tulsa—I. G. Rosser, 1636 S. Cincinnati St., let contract to Roy Shackleton, 1446 S. Birmingham St., Tulsa, for \$20,000 residence and garage; stone veneer, 2 stories and basement, 36x42 ft.; Endacott & Goff, Archts., Wright Bldg.

S. C., Aiken—Bayard Warren, 53 State St., New York, let contract to North-Eastern Construction Co., Nissen Bldg., Winston-Salem, N. C., for \$40,000 residence; brick and frame, 2 stories and basement, oak and tile floors, tile and asbestos roof, conc. foundation; Peabody, Wilson & Brown, Archts., 140 E. 39th St., New York.

Tenn., Chattanooga—D. H. Griswold, care American Bank & Tr. Co., let contract to J. M. Allen & Co., Chamberlain Bldg., for \$26,000 residence; brick, 2 stories and basement; L. H. Bull & N. G. Monning, Archts., Protection Life Bldg.

Tex., Houston—H. Seltzer, 1901 Dennis St., has permit for 4 dwellings, 2040-44-48-54 Colquitt St.; \$4500 each.

Tex., Houston—D. P. Carlton, 2415 Smith St., let contract at \$14,200 to Oscar Fridh, 2217 Brun St., for 2-story, 50x34 ft., brick veneer residence, Inwood Drive, River Oaks; oak floors, shingle roof; Jos. W. Northrop, Jr., Archt., Kirby Bldg. See Want Section—Building Material and Equipment.

### Government and State

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., let contract at \$2,074,000 to Nelson-Pedley Construction Co., 1512 Chestnut St., Philadelphia, Pa., for 6-story main and sub-basement Department of Agriculture bldg.; fireproof, terra cotta exterior, 86,000 sq ft. ground area; elevator plant let to Gurney Elevator Co., 109 W. 64th St., New York, at \$159,975; Treasury Dept. also has low bid at \$61,497 from Cranford Co., Washington, to demolish old Agriculture building.

La., Gadsden—Missionary Servants of Most Blessed Trinity, operating Holy Name of Jesus Hospital, let contract to Foster & Creighton Co., Protective Life Bldg., Birmingham, Ala., for \$750,000 hospital; struct. steel frame, conc. floors, brick walls, tile partitions and backing, terra cotta and Alabama limestone trim, 6 stories and tower, 130x90 ft., with two wings 39x35 ft.; Schmidt, Garden & Erikson, Archts., 104 S. Michigan Ave., Chicago, Ill.; J. P. Burke, Resident Engr., Box 78, Gadsden.

### Hospitals, Sanitariums, Etc.

Ala., Gadsden—Missionary Servants of Most Blessed Trinity, operating Holy Name of Jesus Hospital, let contract to Foster & Creighton Co., Protective Life Bldg., Birmingham, Ala., for \$750,000 hospital; struct. steel frame, conc. floors, brick walls, tile partitions and backing, terra cotta and Alabama limestone trim, 6 stories and tower, 130x90 ft., with two wings 39x35 ft.; Schmidt, Garden & Erikson, Archts., 104 S. Michigan Ave., Chicago, Ill.; J. P. Burke, Resident Engr., Box 78, Gadsden.

La., New Orleans—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., let contract at \$1,780,000 to R. P. Farnsworth & Co., Maritime Bldg., New Orleans, for Marine Hospital; 6 bldgs.; elevator and dumbwaiter not included; main bldg. 5 stories; 3-story administration bldg.; 4-story surgical ward; laundry; power plant; garage; refrigeration plant; quarters for officers and nurses; storage bldg.; workshops, etc.; hospital, administration bldg. and mess hall connected; Colonial type, brick, limestone trim, rein. conc. constr., composite pile foundation, iron grills, slate roofs, 6 limestone columns on administration building.

N. C., Charlotte—Dr. O. L. Miller, 15 W. Seventh St., let contract to Gaston Construction Co., 1147 D. Moorehead St., for \$505,000 clinic, W. Seventh St.; 2 stories, ultimately 5 stories.

Okla., Muskogee—United States Veterans Bureau, Arlington Bldg., Washington, D. C., let contract at \$150,400 to E. C. Ross & Son, 711 E. 16th St., Oklahoma City, for utility bldgs., U. S. Veteran Hospital.

Tex., Galveston—State Bd. of Control, Austin, let contract to Underhill Construction Co., Construction Industries Bldg., Dallas, for \$150,000 psychopathic hospital; rein. conc., brick and stone, about 135x45 ft., pile foundation; Wyatt C. Hedrick, Inc., Archt., First Natl. Bk. Bldg., Fort Worth; wiring, Electric Construction Corp., 209 S. Pearl St.; at \$10,734; elevator, Otis Elevator Co. at \$4000; heating and plumbing, Plumbing & Heating Co., Inc., 985 Orleans St., Beaumont, and Federal Plumbing & Heating Co., Dallas, at \$25,689.

### Hotels and Apartments

Fla., Lake Worth—William Cowan, 28th Ave., erect \$60,000, hollow tile and frame cooperative apartment, Lakeside Drive and 11th St.; Sherman L. Tuppen, Contr.

Ga., Dalton—H. J. Smith let contract at \$35,000 to Barrett Construction Co. for 1-story addition and improvements to 4-story, 100x43 ft., brick, hollow tile and cast stone trim, Hotel Dalton; Barrett roof, conc. floor slab construction, struc. steel columns; A. Ten Eyck Brown, Archt.; A. Barill, Jr., Asso. Archt., both Forsyth Bldg., Atlanta.

Ky., Lexington—W. T. Congleton Co., Contr., Walton Ave. and Third St., started work on Wellington Arms Apartment, Main St. and Woodland Ave., for Harry W. Moores, Fayette Bank Bldg.; 5 stories, brick and hollow tile, fireproof.

Mo., University City, St. Louis—E. H. Trunk, 7130 Forsyth St., erect \$10,000, 2-story, 29x32 ft., brick apartment, 7123 Forsythe St.; slate roof, rubble foundation, hot water heat, oil burner; Henry Diltschneider, Bldr., 5763 Taston St.; Hiram Phipps, Archt., 4162 Castleman St.

Mo., St. Louis—G. R. Menzle, 3443 S. Jefferson St., erect \$10,000, 1-story, 30x40 ft., brick tenement, 3451 Texas St.; asphalt shingle roof, hot air furnace; Arthur R. Darr, Archt., Bldr., 3805 Kingshighway, S. W.

W. Va., Huntington—Chester M. Robinson started work on \$25,000, 3-story, 60-room apartment, Sixth Ave., between Fourth and Fifth Sts.; Neighborgall & Leach, Contrs.

### Miscellaneous

D. C., Washington—H. W. Cord, 1003 K St., N. W., has contract for \$61,000, 2-story brick dwelling, 835 Varnum St., N. E., for Third Franciscan Order.

D. C., Washington—Following sub-contracts awarded on \$200,000, 3-story, limestone Legation Bldg., 34th St. and Massachusetts Ave., N. W., for The Royal Norwegian Legation, care J. J. Whelan, Archt., 1147 Connecticut Ave., N. W., for which DeSible Construction Co., 1200 Fifteenth St., N. W., has general contract; Millwork, National Woodworking Corp., 39 New York Ave., N. E.; plumbing, King & Lawder; heating, D. C. Engineering Co., 3710 Fourteenth St., New York; painting, O. F. Gordon, 3303 Eleventh St., N. W.; all Washington; struc. steel, Dietrich Bros., 220 Pleasant St., Baltimore.

Fla., Miami Beach—Following sub-contracts awarded on club house, restaurant, cabanas, swimming pool and lockers, 90th St. and Ocean, for Surf Club, Inc., Maj. I. Barton, Sec., Lincoln Road: Damproofing interior walls, weatherstripping and caulking, J. Mike Byrne Co., 37 N. E. First Ave.; swimming pool equipment, Aufford Agency; sand and rock, Maule-Ojus Rock Co., 137 N. E. First Ave.; struc. steel, misc. iron, bronze levers, metal lath and channels, Paul E. Shipe; electric wiring, Brown Electric Co., 5-8 St., Baltimore.

730 Collins Ave.; rein. steel and pans, Baker & Holmes, 105 N. W. First St.; millwork, Gate City Sash & Door Co., 137 N. E. First Ave.; tile work, East Coast Tile Co., 100 N. E. 24th St.; flooring, Walton Flooring Co., 1368 N. E. 60th St.; roofing, McCrea-Miller Co., 632 S. W. Eighth St.; conc. tile, Nash Block Co., 333 N. W. 32nd Ave.; orn. iron, Tito & Rogers, 228 N. E. 11th St.; plumbing, Alexander Orr, Jr., 45 N. W. Third St.; glazing, French Mirror Plate Glass Co., 219 S. W. First Court; form lumber, Bailey's Lumber Yards, 1616 N. W. 29th St.; framing lumber, Drake Lumber Yards, 1800 N. Miami Ave.; total cost about \$500,000; John B. Orr Construction Co., Gen. Contr., N. E. 6th St., Miami; Russell T. Fancoast, Archt., Lincoln Road, Miami Beach. 6-19

La., New Orleans—Home for Incurables, 612 Henry Clay Ave., let contract to J. A. Petty & Sons, Inc., Godchaux Bldg., for addition and improvements; Diboll & Owen, Archts., Canal Bank Bldg. 7-3

La., Shreveport—Abe Meyer Corp., 532 Forest St., started work on \$15,000 improvements to building, 311 Texas St., for New England Cafeteria; 2 stories, 20x150 ft., tin roof, terrazzo floors; F. D. Welch, Contr., 830 Elmwood St.; Seymour Van Os, Archt., City Bank Bldg. 6-5

Okla., Stillwater—Stadium Corp., L. W. Burton, started work on \$25,000 steel and rein. conc. stadium addition; Kreipke Construction Co., 708 W. Grand St., Oklahoma City; Philip A. Wilbur, Archt. 6-26

Tex., Dallas—State Fair of Texas, T. E. Jackson, Pres., let contract to Central Contracting Co., Athletic Bldg., for \$90,000 stadium to seat 45,000 people; Mark Lemmon, Archt., Construction Industries Bldg., Dallas; Gavin Hadden, Consrt. Engr., 607 Fifth Ave., New York. 6-26

### Railway Stations, Sheds, Etc.

Okla., Oklahoma City—St. Louis-San Francisco Ry. Co., F. G. Jonah, Ch. Engr., St. Louis, let contract to Tankersley Construction Co., Cotton-Grain Exchange Bldg., Oklahoma City, for \$2,500,000 union station; 360 x222 ft., Bedford limestone; Chicago, Rock Island & Pacific Ry. Co., C. A. Morse, Ch. Engr., Chicago, is to take care of construction of subways. 7-3

### Schools

Ark., Belleville—Belleville Consolidated School Dist., Robert White, erect brick high school; W. H. McClure, Contr., Dardanelle; plans by State Dept. of Education, Little Rock. 6-19

Ark. Booneville—Bd. of Education let contract to J. K. Fraser, Springdale, for \$50,000 school; Haralson & Nelson, Archts., Merchants Bank Bldg., Fort Smith. 6-26

Ark., Fayetteville—Walter S. Duggans has contract at \$21,867 for plumbing and heating for two-story and basement, brick, 12-classroom grade schools for which E. V. Bird Construction Co. has general contract at \$122,280; Haralson & Nelson, Archts., Merchants Bank Bldg., Fort Smith. 6-26

D. C., Washington—Catholic University of America, Michigan Ave. and Harewood Road, applied for permit to build \$16,200 stone grotto; H. W. Cord, Contr., 1003 K St., N. W. 6-26

Fla., Gainesville—State Bd. of Control, P. K. Yonge, Chmn., Pensacola, let contract to J. M. Raymond Construction Co., Hildebrandt Bldg., Jacksonville, for remodeling Section D of Thomas Hall, dormitory at University of Florida. 6-29

Fla., Miami Beach—St. Patrick's Church, Rev. Wm. Barry, 39th St. and Garden Ave., let contract to O'Neill-Orr Construction Co., 212 N. E. 4th St., Miami, for first unit of St. Patrick's High School; \$75,000; 174x41 ft., rein. conc. conc., block and stucco; garage 2 stories, 33x33 ft.; Gerald A. Barry, Archt.; W. E. Weitman, Mech. Engr., both 180 N. Michigan Ave., Chicago. 5-29

Ga., Clarkesville—Bd. of Education erecting \$40,000, brick school; comp. roof; Lockwood & Poundstone, Archts.; Edw. F. Billie, Asso. Archt., both Marietta Bldg., Atlanta; C. G. Griffin, Hartwell, superintending construction. Recently incorrectly reported at Ga., Clarksdale. 6-19

Ga., Quitman—Bd. of Education, J. Harold Saxon, Supt., let contract at \$39,200 to J. M. Culpepper & Sons, Pelham, for 1-story and basement, brick, struc. steel school; comp. and tile roof; Lloyd Greer, Archt., Valdosta. See Want Section—Building Material and Equipment. 6-19

Ga., Washington—City started work on \$10,000 auditorium-armory on school campus; 1½ stories, brick. 6-19

Ky., Louisville—Bd. of Education, Samuel D. Jones, Bus. Dir., let contract at \$429,000 to The George H. Rommel Co., 919 E. Broadway, for Crescent Hill Jr. High School; J. Meyrick Coley, Archt., 1411 Dove Road; Warren & Ronald, Heating and Ventilating Engrs., Heyburn Bldg. 7-3

Ky., Richmond—Eastern State Normal School, G. M. Brock, Bus. Agent, let contract at \$139,137 to J. J. and T. J. Murphy, Green, for Weaver Health Building; heating, \$18,000, Redmon Heating Co., 124 N. Fourth St.; plumbing and swimming pool equipment, \$15,000, DeRuntz Heating & Plumbing Co., 1107 Bardstown Rd., both Louisville; electric, \$8000, Winchester Supply Co., Fort Thomas, call for 220x110 ft. building, 3 stories, brick; gymnasium, 90x120 ft., 8 classrooms. 6-12

Md., Baltimore—Bd. of Awards, City Hall, let contract at \$149,100 to P. C. Streett Engineering Co., Brethrens Lane and Kentucky Ave., for addition and alterations to Govans Elementary School, Campbells Lane and Govans Ave.; O. Eugene Adams, Archt., 329 N. Charles St. 7-3

Miss., Bentonia—Bd. of School Trustees, J. S. Ferris, Pres., let contract to H. J. Ogden, Bentonia, for principal's residence and vocational building for Anding Consolidated School Dist.; J. M. Spain, Archt., Merchants Bank Bldg., Jackson. 6-26

Miss., Ellisville—Jones County Agricultural High School and College Bd. of Trustees, J. M. Bryant, Member, let contract at \$20,650 to Bradley Brothers, Laurel, for 2-story, brick high school; L. W. Duffee, Archt., O'Ferrell Bldg., Laurel. 7-3

Mo., New Madrid—Bd. of Education, Consolidated School Dist. No. 9, J. Sterns, Sec., let contract at \$48,000 to H. A. Sutterfield, Caruthersville, for 2-story and basement, 135x50 ft., brick and rein. conc., fireproof high school and repairs to grade school; soon call for bids for 2-room addition to colored school; Bonsack & Pierce, Archts., 411 Olive St., St. Louis. 6-19

Mo., Piedmont—Consolidated School Dist. No. 4, let contract at \$12,500 to Fred Kurre, Cape Girardeau, for 1 story, 60x96 ft., brick and conc. gymnasium; conc. and wood floors, comp. roof; Reither & Lindsay, Archts., H. & H. Bldg., Cape Girardeau. 7-3

Mo., St. Charles—School Bd. let contract at \$35,235 to Hercules Contracting Co., Wainwright Bldg., St. Louis, for 4-room brick school, Sixth and Perry Sts.; Wm. B. Ittner, Inc., Archt., Continental Life Bldg., St. Louis. 6-12

N. C., Davidson—Davidson College let contract to J. J. McDevitt, Builders Bldg., Charlotte, for unit of conc. stadium on Richardson Field; R. G. Brice, Box 761, Greensboro, Supervisor. 6-24

N. C., Raleigh—Catholic Church, Rt. Rev. Wm. J. Hafey, Bishop of Raleigh, erecting 1-story, 57x90 ft., brick mission school; tile and wood floors, tar and gravel roof; Southeastern Construction Co., Contr., 210 W. Second St., Charlotte; plans by Father Michael, O. S. F., Belmont. See Want Section—Building Material and Equipment. 7-3

N. C., Youngsville—Franklin County Bd. of Education let contract to J. W. Stout, Inc., Sanford, for 1-story, 75x56 ft., brick and frame, 4-classroom school; hardwood floors, comp. roof; M. S. Davis, Archt., Louisburg. 6-26

Okl., Broken Arrow—Bd. of Education let contract to W. E. Corlett, Vinita, for 1-story, 53x50 ft., brick grade school addition; A. J. Love & Co., Archts., Atco Bldg., Tulsa. 6-26

Okl., Empire City—Empire City Consolidated School Dist., J. J. Knott, Clk., erect \$16,000, 1-story brick and stone school; Robert & Klein, Contrs., Duncan; The Huseman Co., Chickasha. 6-26

Okl., Holdenville—Bd. of Education, R. E. Penney, Sec., let contract at \$55,166 to Cowan Construction Co., Shawnee, for 3-story, 268x210 ft., brick, stone and rein. conc. high school. 6-26

Okl., Oklahoma City—C. M. Dunning, Gen. Contr., 420½ N. Hudson St., awarded sub-contracts on University Heights, Capitol Hill Jr. High Lee and Hawthorne school additions as follows: Rein. and struc. steel, Capitol Steel & Iron Co., 1726 S. Agnew St.; crushed rock, sand, lime and bricklayers cement, Dolese Bros. Co., 1111 W. 13th St.; wardrobes, swing blackboards and metal toilet partitions, Bissell Builders Supply Co., 11 Colcord Bldg.; finish hardware, A. G. Hoge Hardware Co., 1106 N. Broadway, W. J. Petree & Co., 121 W. Main St.; face brick, Lusco Brick & Stone Co., Commercial Exch. Bldg.; common brick, United Brick & Tile Co., Petroleum Bldg.; lumber and cement, McGraw-Bearly Lumber Co., 20½ W. 12th St.; millwork, Oklahoma Sash & Door Co. 6-26

Ga., Atlanta—Following sub-contracts awarded on \$100,000 improvements to Paramount Theatre, 163 Peachtree St., for Public Theaters Corp., Paramount Bldg., New York, for which A. K. Adams & Co., 542 Plum St., Atlanta, have general contract: Plaster work, Clyde M. Watson Co., 1018 Boulevard, N. E.; millwork, Randall Brothers, 665

8 E. Grand St.; cut stone, O. K. Cut Stone Works, 716 W. Second St.; painting, H. T. Woodress, 1101 W. 24th St.; Layton, Hicks & Forsyth, Archts., Braniff Bldg. 7-3

Okla., Osage—Osage Dist. No. 55 soon start work on \$10,000, 2-story, 50x50 ft. brick and tile school; T. Dahlstrom, Contr., 422½ S. Boston St.; A. J. Love, Archt., Atco Bldg., both Tulsa. 6-19

Okla., Tulsa—School Bd. let contract at \$11,985 to R. K. Hughes Co., Kennedy Bldg., for improvements to Booker T. Washington School auditorium. 6-19

Tex., Austin—St. Paul's Evangelical Lutheran Church completed excavation for \$20,000 educational building; 2 stories, 31x79 ft., rein. conc., brick and limestone trim, conc. and wood floors, built-up roof; Schwarzer & Lorey, Contrs., 404 W. 35th St., Austin; Harvey P. Smith, Archt., Natl. Bank of Commerce Bldg.; Lilly & Draught, Engrs., Frost Bldg., both San Antonio. See Want Section—Building Material and Equipment. 6-26

Tex., Harper—Harper Consolidated Ind. School Dist., Dr. J. W. Birt, Sec., let contract at \$10,500 to August Langerhans, Frederickburg, for 2-story, 35x75 ft., limestone, 4-classroom addition; built-up roof, wood floors; Hans C. Christensen, Archt., Palace Theater Bldg., Frederickburg; Beretta Stiles, Engr., San Antonio. See Want Section—Building Material and Equipment. 6-26

Tex., Houston—Christ the King Church, Rev. James Patrick, 602 Milwood St., let contract at \$39,000 to T. B. Hubbard, 1507 Shepherd St., for 2-story, 46x49 ft., 10-room convent and 135x83 ft., rein. conc. and brick school; Louis P. Josserand, Archt., First Natl. Bank Bldg. 6-19

Tex., Mineral Wells—Bd. of Education, Jesse Hayes, Pres., let contract at \$49,567 to W. W. Brassell for 2-story 77x140 ft., brick and rein. conc. Sam Houston School; A. B. Withers, Mineral Wells, and Elmer G. Withers, Holmes Bldg., Fort Worth, Asso. Archts. 6-19

Tex., San Antonio—Bd. of Education, Dr. J. A. McIntosh, Pres., let contract at \$16,873 to Rheiner & Kroeger for cafeteria for Bonham Elementary School No. 10; Paul G. Silber, Archt., Bedell Bldg.; Matthews & Kenan, Struc. Engr.; Lloyd D. Royer, Mech. Engr., both Smith Young Tower. 6-25

Va., Lexington—Virginia Military Institute let contract at \$147,675 to J. L. Crouse, Amer. Bank Bldg., Greensboro, N. C., for Nichols Engineering Hall; Gothic architecture, 3 stories, brick walls, stucco exterior trimmed with stone, fireproof, conc. floors; Carnal, Johnston & Wright, Archts., Electric Bldg., Richmond. 4-24

Va., Lynchburg—School Bd. let contract to W. L. Brown, Appomattox, for school building. 6-26

Va., Richmond—Saint Christopher's School, Westhampton, let contract to Doyle & Russell, Central Natl. Bank Bldg., for cottage and alterations to other buildings. 6-26

Va., Roanoke—Roanoke County Bd. of Education has low bids from J. L. Mason, 611 Franklin Road, S. W., and O. A. Cronk, R. F. D. 6, and will award them contracts for schools at Ogden and Cone Hurst. 6-26

Va., Westhampton, Richmond—Saint Catherine's School let contract to Claiborne & Taylor, Broad Grace Arcade Bldg., Richmond, for addition. 6-26

W. Va., Morgantown—State Bd. of Control, Henry N. Bradley, Pres., Capitol Bldg., Charleston, let contract to C. A. Moses Construction Co., 178 W. Adams St., Chicago, for conc. tunnel to connect new library at West Virginia University. 6-12

### Stores

D. C., Washington—A. A. Footer, 3333 Connecticut Ave., erect \$100,000, 4-story, brick building for stories and bowling alley; Louis H. Collegeman, Contr., 731 Princeton Pl., N. W. 6-26

La., New Orleans—Mrs. Louise C. Thomas has permit for \$12,000 commercial building, St. Charles and Prytania Sts.; Paul G. Charbonnet, Contr., 830 Union St. 6-26

N. C., Charlotte—Home Real Estate & Guaranty Co., 219 N. Tryon St., started work on 4 stores on Morehead St.; \$25,000; 23x70 ft., brick. 6-26

### Theatres

Ga., Atlanta—Following sub-contracts awarded on \$100,000 improvements to Paramount Theatre, 163 Peachtree St., for Public Theaters Corp., Paramount Bldg., New York, for which A. K. Adams & Co., 542 Plum St., Atlanta, have general contract: Plaster work, Clyde M. Watson Co., 1018 Boulevard, N. E.; millwork, Randall Brothers, 665

Marietta St., N. W.; marble, Godfrey Marble & Tile Co., Asher St.; marble setting, Caldwell Marble & Tile Co., Red Rock Bldg.; ornate iron, Cole Iron Works, 1272 Murphy Ave., S. W.; glass and glazing, F. J. Boeddege & Sons; steel, Austin Brothers Bridge Co., 1197 Mickleberry St., N. W.; stone work, Capital Stone Co., 770 W. Ashland Ave., N. E.; rein. steel, Kallman Steel Co., Candler Bldg.; plumbing, S. S. Sherard Co., 86 Munter St., S. E., and Stephenson Co., Inc., 145 Spring St., N. W.; electrical work, J. M. Clayton Co., 63 Cone St., N. W., and Sam Donelson, Glenn Bldg.; sheet metal, Atlanta Sheet Metal Works, 799 Marietta St., N. W.; bronze, Cincinnati Manufacturing Co., 319 Peachtree St., 6-26 Md., Baltimore — F. H. Durkee, Arcade Bldg., has permit for \$40,000, 83x146 ft.,

motion picture theater, 3500-10 Edmondson Ave.; Consolidated Engineering Co., Contr., 20 E. Franklin St.; John J. Zink, Archt., 2826 Overland Ave.; Kubitz & Koetnig, Engrs., Emerson Tower Bldg., excavating.

Miss., West Point—Kuykendall-Sanford Enterprise, Inc., organized to establish theaters and amusement houses in mid-south, particularly in northeast Mississippi; John T. Sanford, Columbus, and Ed Kuykendall; first unit of chain to be erected at West Point; \$40,000, Spanish type, seat 700 people; A. B. Simmons Construction Co., Contr., West Point.

N. C., Durham—W. G. Logan let contract to A. L. Boykin, Sanford, for \$40,000, 1-story, 45x32 ft., brick and tile, fireproof moving picture theater; excavating; seat 700 people;

Chas. C. and F. W. Benton, Archts., Fidelity Bldg., Wilson.

### Warehouses

Tex., Austin—Becker Lumber Co., 87 Congress St., let contract to M. L. Pearson, 4212 Speedway, for 1-story, 40x150 ft., brick warehouse, E. First St. between Congress Ave. and Brazos St.; cement floors, built-up roof; owner to furnish lumber, cement and hardware; Edwin C. Kreisle, Archt., Scarborough Bldg.

Tex., Houston—Tom Tellepsen has permit for \$40,000 warehouse, Sidney and Jefferson Sts.; conc.; 64,233 sq. ft. floor space; Tom Tellepsen Construction Co., Contr., both 3900 Clay St.

## WANT SECTION

### THE CLASSIFICATIONS IN THIS SECTION ARE:

#### Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

*Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.*

#### Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

#### Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

#### Machinery and Supplies

**Crane.**—J. W. Clearley & Sons, 3131 Grand Ave., Dallas, Tex.—Wants data and prices on overhead crane, 5 to 10 tons capacity, 27-ft. 6-in. span, hand or electrically operated at current of 220 volt, 3 phase, 60 cycle.

**Excelsior Machines.**—M. P. Holman, Ozark, Ala.—Wants prices and data on 10 or 15 new or good used excelsior machines, with necessary shaftings and pulleys.

**Gear Cutter.**—W. M. Smith & Co. (Mechy. Dealer), Birmingham, Ala.—Wants prices and data on 8-in. or larger spiral gear cutter.

**Light Plant Equipment.**—Town of Prentiss, Miss., L. M. Williams, Town Clk.—Wants data and prices on following for complete installation as additional unit:  
(1) Generator  
(2) Oil Engine—120 h. p.  
(3) Switchboards.

**Saw (Cut-Off).**—Denny Mfg. Co., Box 27, Roseboro, N. C.—Wants prices and data on Beach, double end cut-off saw, to size panels 80x72 in.

**Tractor (Crawler Type).**—Tick Bros., Paducah, Ky.—Wants medium sized crawler type tractor.

**Guyan Machine Shops, Inc. (Mechy. Dealer), Logan, W. Va.**—Wants prices and data on:

- (1) Building—40x80 ft. to eaves
- (2) Crane—5-ton capacity, locomotive type, electrically or gasoline operated
- (3) Hoists—for I-beam, 5 to 8-ton capacity, n. c. and d.c., 220 volts
- (4) Motors—a. c., 220-440 volts, 3-phase, 60 cycle, 5 h. p. to 100 h. p.
- (5) Punch and Shear—preferably No. 1½ Buffalo Universal Iron Worker
- (6) Welding Machine—200 to 300 amps., gas-line-driven.

#### Miscellaneous

**Absorbent Paper.**—Cleanosol Manufacturing Co., 261 Broadway, New York.—Wants prices and samples on absorbent paper (facial tissue).

**Celluloid, etc.**—C. P. Murph, Fairfax, S. C.—Wants prices and data on sheet celluloid 1/16 to 1/4 in. thick, in colors; also on pearl plates for making breast pins.

**Paving Materials.**—Spoon & Lewis, Consol. Engr., Greensboro, N. C.—Want prices and data on materials for constructing light traffic street surfacing with bituminous materials.

**Popcorn and Peanut Machines.**—Harry Dillon, Corner Polk and LaBranch St., Houston, Tex.—Wants prices and data on popcorn and peanut machines.

**Window Shade Materials.**—Acme Window Shade Mfg. Co., 1305 Austin Ave., Waco, Tex.—Wants prices and data on duck cloth, dyed tan color, such as is generally used in manufacturing shades for school rooms; also necessary hardware to make up finished shade; requests samples of cloth, preferably in 8 oz.

#### Building Material and Equipment

**Carvel & Co., Archts.-Contr., Milam Bldg., San Antonio, Tex.**—Want prices on following for \$65,000 apartment:

**Electric Refrigerators**  
Flooring—hardwood, tile  
Incinerator  
Plaster Board  
Roofing—built-up.

**Dr. E. H. Anderson, 202 N. Patterson St., Valdosta,** wants prices on following for \$13,000 clubhouse for American Legion:

**Electric Refrigerators**  
Flooring—hardwood, composition  
Metal Ceilings  
Metal Doors  
Roofing—asbestos shingle, slate  
Tile—interior.

**E. E. Christopher, Archt., Louderman Bldg., St. Louis, Mo.**—Want prices on following for dwelling, Webster Groves, St. Louis:  
Flooring—hardwood, tile  
Roofing—slate.

**E. H. Page, Contr., Ugarte Bldg., Laredo, Tex.**—Want prices on following for \$50,000 school, Luling, Tex:

**Cast Stone**  
Flooring—hardwood  
Roofing—asbestos shingle.

**Hans C. Christensen, Archt., Palace Theater Bldg., Fredericksburg, Tex.**—Want prices on following for \$10,500 school at Harper, Tex.:

**Roofing—built-up.**

**Haralson & Nelson, Archts., Merchants Bank Bldg., Fort Smith, Ark.**—Want prices on following for \$50,000 church:

**Flooring—hardwood**  
Limestone  
Roofing—asbestos shingle  
Steel Sash.

**Harrisonburg Building & Supply Co., Inc., Harrisonburg, Va.**—Want prices on following for \$82,000 remodeling work and fireproofing of courthouse:

**Flooring—linoleum, terrazzo, tile**  
Marble  
Metal Doors  
Tile—gypsum

**Ventilators**  
Brass and Bronze Work.

**J. M. Culpepper & Sons, Contrs., Pelham, Ga.**—Want prices on following for \$50,000 school, Quitman, Ga.:

**Roofing—tile.**

**Jas. W. Northrop, Jr., Archt., Kirby Bldg., Houston, Tex.**—Want prices on following for \$15,000 residence:

**Electric Refrigerators**  
Flooring—hardwood, linoleum, tile.

**Rt. Rev. Wm. J. Hafey, Bishop of Raleigh, N. C.**—Want prices on following for \$20,000 Mission School:

**Flooring—tile.**

**Schwarzer & Lorey, Contrs., 404 W. 35th St., Austin, Tex.**—Want prices on following for \$20,000 education school for St. Paul's Evangelical Lutheran Church:

**Metal Partitions.**—“Sanymetal” or equal compartment partitions for toilets.

**W. R. Ellis, Contr., Clarksdale, Miss.**—Want prices on following for \$40,000 school, Horn Lake, Miss.:

**Roofing**—asphalt shingle, built-up  
Tile—hollow.

**Wm. T. Nolan, Archt., Canal Bank Bldg., New Orleans, La.**—Want prices on following for addition and alterations for Clifton Latilais, Lafayette, La.:

**Cast Stone**

**Flooring**—hardwood, tile composition

**Marble**

**Metal Doors**

**Roofing**—built-up, slate

**Wire Glass**

**Walter L. Perry, Contr., Philadelphia, Miss.**—Want prices on following for \$41,000 school, Duck Hill, Miss.:

**Cast Stone**

**Roofing**—built-up.

**W. R. McCormick Construction Co., Inc., Contr., Joplin Natl. Bank Bldg., Joplin, Mo.**—Want prices on following for \$90,000 school, Joplin:

**Cast Stone**

**Flooring**—hardwood, linoleum, terrazzo, tile and composition

**Marble**

**Metal Doors**

**Plaster Board**

**Roofing (flat)**—built-up, slate, tile

**Tile**—gypsum, hollow, interior

**Terra Cotta Trim**

**Ventilators**

**Wire Glass**

**Brass and Bronze Work.**

#### Bids Asked

**Alley.**—Louisville, Ky. See Construction News.—Roads, Streets, Paving.

**Boiler.**—Supv. Archt., Treasury Dept., Washington, D. C.—Bids July 16 for heating boiler, U. S. post office, and court house, Charlottesville, Va.

**Bridge.**—Love Point, Md.—See Construction News, Bridges, Culverts and Viaducts.

**Bridges.**—State of Virginia. Bids for 4 bridges. See Construction News—Roads, Streets, Paving.

**Bridge.**—Dallas, Tex. See Construction News—Roads, Streets, Paving.

**Bridges.**—State of Kentucky. Bids for 5 bridges. See Construction News—Roads, Streets, Paving.

**Bridges.**—State of North Carolina. Bids for 2 bridges. See Construction News—Roads, Streets, Paving.

**Buckle Plates, etc.**—U. S. Engr. Office, War Dept., Huntington, W. Va.—Bids July 14 for buckle plates, rivets, etc.

**Bulkhead.**—Harris County Drainage Dist. No. 2, H. L. Washburn, County Auditor, Courthouse, Houston, Tex.—Bids July 19 for bulkhead.

**Cages.**—Commiss. Dist. of Columbia, Washington, D. C.—Bid July 16 for furnishing and installing 40 portable metal and glass cages for new exhibition buildings for reptiles, etc. National Zoological Park.

# LEADITE

Trade Mark Registered U.S. Pat. Office



Indianapolis Water Company—laying bell and spigot water mains with Leadite Joints.

## “Performance”

The following, which are only a few of the many users of Leadite, advise they have laid over 1800 miles of water mains jointed with Leadite:

	SIZES
Crumley, Jones & Crumley Company.....	200.00 Miles.....4-in. to 36-in.
Dayton, Ohio.....	128.25 Miles.....4-in. to 84-in.
Flint, Michigan.....	237.41 Miles.....4-in. to 30-in.
Ft. Worth, Texas.....	192.85 Miles.....4-in. to 36-in.
Indianapolis Water Company.....	150.00 Miles.....6-in. to 36-in.
Louisville Water Company.....	165.82 Miles.....Up to and including 48-in.
New Bedford, Mass.....	25.00 Miles.....4-in. to 48-in.
Oklahoma City, Oklahoma.....	94.50 Miles.....6-in. to 30-in.
Pennsylvania Water Company.....	110.00 Miles.....4-in. to 42-in.
Philadelphia Suburban Water Co.....	230.00 Miles.....Up to and including 24-in.
St. Louis, Missouri.....	90.00 Miles.....Up to and including 36-in.
City of Tulsa, Oklahoma.....	37.00 Miles.....6-in. to 36-in.
Washington Suburban San. Dist.....	150.00 Miles.....Up to and including 24-in.
Total.....	<b>1810.83 Miles</b>

This will give some idea of the extensive use of Leadite for jointing water mains.

*The pioneer self-caulking material for c. i. pipe.  
Tested and used for over 30 years.  
Saves at least 75%.*

THE LEADITE COMPANY  
Land Title Building - - Philadelphia, Pa.



# No Caulking'



**Dikes.**—U. S. Engr. Office, 428 Custom House, St. Louis, Mo.—Bids July 16 for timber crib dikes. See Construction News Columns—Miscellaneous Construction.

**Dredging.**—U. S. Engr. Office, 300 Custom House, Baltimore, Md.—Bids Aug. 5 for dredging. See Construction News Columns—Draining and Irrigation.

**Electrical Supplies.**—U. S. Engineer Office, Huntington, W. Va.—Bids July 14 for 850 ft.  $\frac{3}{4}$ -in. and 300 ft.  $\frac{3}{4}$ -in. galvanized conduit; 500 ft., No. 14 and 500 ft. No. 12, white R. C. D. B. copper wire; 500 ft. No. 14 and 500 ft. No. 2 R. C. D. B. black copper wire; all solid; 100 10-amp., 100 20-amp. and 100 30-amp. all 125-volt plug fuses. Circular No. 31-2.

**Hangars.**—Office of Constructing Q. M., Scherzer, Randolph Field, Tex.—Bids July 28 for erection of 18 standard 110x220 ft., airplane hangars at Randolph Field.

**Heating Boiler.**—Treasury Dept., Office of Supv. Archt., Washington, D. C.—Bids July 18 for furnishing all labor and material required for heating boiler at P. O. Dublin, Ga.; information on application.

**Furniture, etc.**—Q. M. Supply Officer, Ft. Sam Houston, Tex.—Bids July 17 for 71 steel office cabinets, 15 office chairs, 205 paper fastening machines, 100 folding tables, etc.

**Levee.**—U. S. Engr. Office, Customhouse, St. Louis, Mo.—Bids July 23 for placing about 26,000 cu. yd. earth work in repairing levee of St. Genevieve Levee Dist. No. 1, St. Genevieve County, Mo.

**Miscellaneous.**—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids July 24 for following, Sch. 2573:

**Locomotive tender wheels, pipe, pipe fittings, bolts, nuts, rivets, expansion bolt shells, washers, sanitary fixtures, valves, cocks, shower heads, basin traps, siphons, etc.**

**Motors.**—See Sewage Pumping Station.

**Paving.**—Hyndman Borough, Cumberland, Md.—See Construction News—Roads, Streets, Paving.

**Paving.**—Victoria, Tex. See Construction News—Roads, Streets, Paving.

**Pipe (Clay).**—See Sewer Construction.

**Pipe, Valves, etc.**—See Sewage Pumping Plant.

**Pumps (Sewage).**—See Sewage Pumping Station.

**Reinforcing Steel.**—See Sewage Pumping Station.

**Roads.**—State of Virginia. Bids for 5 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—State of North Carolina. Bids for 5 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—State of Kentucky. Bids for 17 roads. See Construction News—Roads, Streets, Paving.

**Road.**—Chattanooga, Tenn. See Construction News—Roads, Streets, Paving.

**Roads.**—State of Kentucky—Bids for 17 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—State of Maryland. Bids for 9 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—Dallas, Tex. Bids for 8 roads. See Construction News—Roads, Streets, Paving.

**Rotary Dryer.**—City of Houston, Tex.—Bids July 16 for furnishing rotary dryer at North Side sewage treatment plant; plans, etc. at office of City Engr.

**Sewer Construction.**—City of Greenville, Miss., Guy Drew, Clk., bids July 21 for construction of sanitary sewer mains and laterals; mains and laterals consist of: 2,133 ft. of 8-in., 2,958 ft. of 10-in., 466 ft. of 12-in., 1,660 ft. of 15-in., 450 ft. of 18-in., and 775 ft. of 21-in. clay sewer pipe; trench excavating; 21 manholes; wye branches and chimney pipes; plans, etc., from City Engineering Dept.

**Sewage Pumping Station.**—City of Greenville, Mass., Guy Drew, Clk.—Bids July 21 for construction of sewage pumping station; work consists of 432 cu. yds. earth excavation; 198 cu. yds. Class A. cons.; 21,000 lbs. of rein. steel; 2 sewage pumps, 800 g.p. against 74 ft. head and all necessary piping, valves installed and complete ready to operate; 2 motors of rated speed and h.p. to co-ordinate with above pumps; automatic starting equipment and necessary electrical apparatus and wiring; pump house complete

25x25 ft. with Johns-Manville corrugated sheet asbestos roof and other details of construction; 7,800 ft. of Class A. c.i. pipe in place; 7,800 ft. of excavation; plans, etc., from office of City Engineering Dept.

**Street.**—McComb, Miss. See Construction News—Roads, Streets, Paving.

**Tractors.**—Comrs. Dist. of Columbia—Bid July 11 for 2 tractors.

**Water Works.**—City of Hattiesburg, Miss., receives bids July 17 to furnish materials, labor and equipment for improvements to water works system, including pumping station and power plant, aerator, filter plant and high level pumping plant to present distributing system; information on application to Thomas H. Allen, Consil. Engrs., 63 McCall St. Memphis, Tenn.

**Well Drilling.**—U. S. Veterans' Bureau, Construction Division, Room 764, Arlington Bldg., Washington, D. C.—Bids July 22 for furnishing materials, labor, power and supplies and performing all work required for drilling, testing and finishing complete deep well at U. S. Veterans' Hospital, Alexandria, La.; information on application.

## New Fertilizer Company Organized

Organization of the Oberphos Company, Baltimore, for using an improved process in the manufacture of phosphates and superphosphates, has been announced. G. Ober & Sons Co., fertilizer manufacturers of Baltimore, and the Koppers Company, Pittsburgh, Pa., assemblers of by-product coke and gas ovens, benzol, tuluol, naphthalene, gasoline, tar and ammonia recovery plants, are interested in the new company, the latter through the Bartlett Hayward Co., Baltimore. Gustavus Ober, Jr., Baltimore, will be the president.

## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

### Changes in Missouri-Kansas-Texas.

At a meeting of the directors of the Missouri-Kansas-Texas Railroad Company, June 18, H. E. McGee, vice president and general manager, was elected executive vice-president, to have charge of the operating, engineering, accounting and traffic departments. His office will be in St. Louis. F. W. Grace, general superintendent, was appointed general manager, with office in Dallas. He will have charge of the operating department, under Mr. McGee.

It was compiled and edited by the editorial staff of the Chemical Engineering Catalog, Francis M. Turner, editor, the second edition being completely revised and enlarged under supervision of Thomas C. Gregory, editor, and Isabelle M. Welch, assistant editor. The price of the volume is \$10.

**Heating Systems.**—A 24-page bulletin, "Controlling Heat and Heating Cost With the Airblanket," has been issued by the Skinner Brothers Manufacturing Company, St. Louis, Mo., manufacturers of heater units. The publication presents full information on the application of a new principle in industrial heating, known as the Skinner Brothers Airblanket system.

**Ash-Conveying Methods.**—The Brady Conveyors Corporation, Chicago, has issued a 24-page catalogue, "Modern Methods of Ash Handling," which describes and illustrates several methods of handling ash by "pipe line" as well as by other types of ash-conveying. The publication details the construction and operation of the Brady steam jet ash conveyor, steam jet vacuum systems, Brady pneumatic vacuum systems and others.

**Foreign Shipping Service Map.**—A world map-chart indicating the shipping services to foreign ports offered by the American Merchant Marine has been issued by the United States Shipping Board's Bureau of Research, Washington, D. C., for distribution among American business concerns and organizations interested in foreign commerce. The map shows that of the 83 lines operating under the American flag, 19 were controlled by the Shipping Board on January 1.

**Power Plant Materials.**—Booklet No. 102, devoted to the application of J-M products to power plants, has been issued by Johns-Manville, New York. This company furnishes a wide variety of power plant materials, including such products as the J-M refractory cement, J-M Aertite boiler coating and a complete line of insulating materials, packings, gaskets, brake blocks and linings, Orangeburg fibre conduit for cableways, Celite for improving workability of concrete mixes, etc.

## Trade Literature

**Transportation Costs.**—The Relay Motors Corporation, Lima, Ohio, manufacturers of Relay, Commerce, Garford and Service motor trucks and buses, have issued a booklet, "The Story of Relay," containing information gathered in several years' investigation into the transportation problems of a large number of users of Relay equipment. The publication features the Relay oscillating drive principle.

**Chemical Dictionary.**—The Book Department of the Chemical Catalog Company, Inc., New York, has issued the "Condensed Chemical Dictionary," a reference volume designed for those who require quick access to essential data on chemicals and other substances used in manufacturing and in the laboratory.



## FOR NEAT BRICKWORK

THE mason can do neater, cleaner brickwork with Brixment than with any other mortar.

Because Brixment makes an unusually rich and plastic mortar which sticks to the brick and doesn't slop over the face of the wall.

Brixment is manufactured to harden a little more slowly than portland cement. This enables the mason to strike the joints conveniently, neatly and uniformly before the mortar sets up. Louisville Cement Company, Incorporated, Louisville, Kentucky.

CEMENT MANUFACTURERS SINCE 1830

# BRIXMENT

for MASONRY and STUCCO



## \$12,000,000 GAS LINE FOR FORT WORTH

### City Tentatively Accepts Contract for Project

Fort Worth, Tex.—City council has tentatively accepted the terms of a contract with Arthur M. Lampert, Inc., New York, for construction of an 18-inch pipe line to supply Fort Worth with natural gas, the line to be completed within 8 months. The cost of the project will be between \$10,000,000 and \$12,000,000, it is estimated. An election will soon be called on a proposal for the city to take over the properties of the Fort Worth Gas Company, it is announced.

### Independence Day Goodwill

In expressed belief that the Fourth of July is "a time when we all open our minds and hearts to thoughts of mutual helpfulness and cordial relations with our fellowmen," the Atlantic Bridge Company, Greensboro, N. C., has distributed widely a copy of the Declaration of Independence, on fine art parchment.

An accompanying greeting says that the country owes its existence to a great group of patriots who united in a great cause for the happiness and prosperity of all, and adds: "Just so, in business and the affairs of ordinary life, how truly do we all owe our success and our prosperity to the support and friendly consideration of others."

In expressing its debt of goodwill to its friends, the company says that it increases "the happiness of the occasion" for itself.

### Growth of Tampa's Exports

Col. Peter O. Knight of Tampa, Fla., directs attention to 12 volumes of statistics compiled by the Tampa Chamber of Commerce, in support of its movement for port development. The figures presented show the large area of Tampa's trade and that practically the whole world is a market for the city's shipping.

The information was prepared for Congress to substantiate a request made that Tampa's ship channels be deepened to 30 feet. Tampa's foreign commerce now spreads from Japan and Korea in the far East to West Africa.

In 1921 Tampa's total exports were 438,339 tons, of which 97 per cent was phosphate. The other three per cent consisted of 1700 tons of iron and steel, 3715 tons of lumber and 3833 tons of miscellaneous products. In 1929 phosphate exports were 960,074 tons, a gain of 100 per cent, but increased diversifi-

cation of commodities shipped through Tampa's harbor reduced the proportion of phosphate tonnage to 81 per cent of the total exports. Lumber amounted to 210,313 tons, or 16 per cent of total exports; metals exported amounted to 14,499 tons and non-metallic minerals, including cement and asphalt block, amounted to 21,017 tons, while 3393 tons were miscellaneous.

### Exhibitors Committee of the Power Shows Elects

Carl Stripe, publicity director of the Combustion Engineering Corporation, was elected chairman of the Exhibitors Committee of the Power Shows at the annual meeting held June 11. Mr. Stripe succeeded Frank Page, publicity director of the Foster Wheeler Corporation.

Other officers elected were: Victor Wichum, Chief Engineer, Tagliabue Manufacturing Company, Vice-Chairman, succeeding J. C. McQuiston, General Advertising Manager, Westinghouse Electric & Manufacturing Company; W. W. Bertram, New York Sales Manager, Morse Chain Company, Secretary, succeeding Carl Stripe; and J. P. Ferguson, Sales Engineer, Reading Steel Casting Company, Treasurer, succeeding B. G. Waring, President, Yarnall-Waring Company.

The E. C. P. S. was formed at a meeting in 1926. In ensuing years, all the more important power shows were investigated and special "status reports" were distributed to manufacturers. These contained more vital information than is included in the usual promotional literature distributed by the power show managements. In addition, the consensus of manufacturers relative to favoring exhibiting at certain shows was reported on. This type of service to manufacturers has helped considerably in determining exhibition budgets, it is declared.

### Kentucky Bus Association

The sixth annual convention of the Kentucky Bus Association, W. H. Harratty, secretary, Lexington, Ky., will be held July 30 and 31 at the new Beecher Hotel, Somerset, Ky., with morning and afternoon sessions on the first day and a banquet at night. July 31 will be devoted to an all-day outing with a barbecue at Cumberland Falls. Leading manufacturers of bus equipment, accessories and supplies are expected to have representatives in attendance and exhibits on display. The Consolidated Coach Corp., Lexington, will run special buses from Lexington to Somerset to accommodate all who desire to come by way of Lexington.

### Budget Plan For Plumbing Work

The building modernization movement which has become a great factor in the general construction movement throughout the country has been stimulated by the creation of a "budget plan" through which plumbing and heating parts of buildings can be modernized without financial strain to the owners.

As explained by L. R. Varney of the Crane Company, Chicago, which manufactures valves, fittings, fabricated pipe and heating and plumbing material, and has cooperated with leading plumbing contractors in the movement, the plan is as follows:

"In the modernizing of his plumbing or heating plant or apparatus, an owner pays down only 10 per cent in cities of 10,000 population; in cities of less than 10,000, the minimum down payment is \$5. The remainder of the cost is paid in small monthly sums, liberal time being allowed for settlement of the account in full.

"More than this, the owner does not pay a cent until the work is satisfactorily finished—not until then is the initial payment made."

Sales made under this budget plan, Mr. Varney adds, are no different from regular cash sales, except that the work must be done by a Crane Qualified Contractor-Dealer and, of course, to financially responsible owners.

### For Arkansas' Economic Development

Little Rock—The Arkansas Bankers Association has adopted a resolution promising support to the State Chamber of Commerce in its efforts to induce the Legislature next winter to enact legislation that will tend to accelerate the economic development of the State. The Arkansas Underwriters Association had previously taken similar action. The objectives so far selected by the Chamber of Commerce are a forest protective and reforestation policy; relief for delta property owners who are burdened with drainage and levee taxes; a cattle tick eradication program; adequate financing for common schools and expansion for the department of agriculture.

### A New Industry Developing in the South

Frigid Fruits, a subsidiary of the Atmore Creamery, Atmore, Ala., has completed installation of equipment for freezing fruits, said to be an advance step over the ordinary cold-pack method of fruit shipments. The plant will handle peaches and other fruits and an order was recently secured by President W. M. Patterson for the first carload of strawberries to be handled by this company.

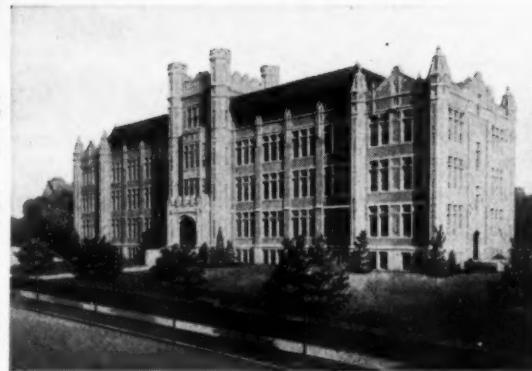
# STABILITY



ABOVE, Main Instruction Building of the International Correspondence Schools, Scranton, Penna.

AT LEFT, International Correspondence Schools Limited, International Buildings, Kingsway, London, England.

AT RIGHT, Administration Building of the International Correspondence Schools, Scranton, Penna.



MODERN BUSINESS is becoming vitally interested in guiding the education of its employees. One evidence of this fact is the care with which business and industrial leaders today are investigating correspondence schools and other educational agencies before they recommend them to their men. They are following a wise course. It is important that the employer should be fully acquainted not only with the scope and quality of the instruction offered by a school, but with its physical equipment and financial standing — its ability to meet its obligations.

The International Correspondence Schools—the I. C. S., as it is familiarly known—is the largest educational institution that has ever existed. It touches the lives of more individuals, in all parts of the world, than any other

school. The millions who have benefited by its instruction are found in practically every city, village and hamlet on the face of the earth.

To carry on this immense educational service an organization has been built up representing an invested capital of more than \$10,000,000. The buildings of the International Correspondence Schools in Scranton occupy two city blocks. Its force of executives, principals, instructors, clerks and other home office employees, number sixteen hundred. There are more than eight hundred field representatives in the United States alone. Including employees of affiliated companies in foreign lands, the total personnel of the I. C. S. is nearly three thousand.

There is nothing unwieldy about this huge organization. It operates with

machine-like smoothness. And though it has given instruction to more than 3,600,000 people, the individual student and his progress are never lost sight of. The young man who enrolls for a course with the I. C. S. receives far more than the written terms of his scholarship. He has the full benefit of the institution's size and resources, and with it warm encouragement and personal interest. He is treated as a friend as well as a student.

Hundreds of business organizations, including some of the largest companies in the country, have arranged with the International Correspondence Schools to supply training to their employees. They have chosen the I. C. S. not only for the thoroughness and breadth of its courses, but for its financial strength. They know it as a reliable institution.

# INTERNATIONAL CORRESPONDENCE SCHOOLS

SCRANTON  
PENNSYLVANIA

FOUNDED  
1891

July 10, 1930

## FINANCIAL NEWS

### Bond Issues Proposed

**Ala., Mobile**—Mobile County Bd. of Revenue, and Road Comms., E. C. Doody, Clk., receives bids July 21 for \$65,000, 5%, \$1,000 denom. road and bridge bonds.

**Fla., Tampa**— Hillsborough County Court, W. A. Dickenson, Clk., Circuit Court, plans selling \$125,000 refunding bonds; \$90,000, paving, etc.; \$15,000, harbor; \$20,000, municipal hospital.

**Ga., Barnesville**—Courthouse — Lamar County votes July 23 on \$70,000 bonds. 6-5

**La., New Orleans**—City Comsn. Council considering sale of \$940,000 paving certificates; Bryson Villas, Engr.

**La., Ruston**—Lincoln Parish School Bd., H. L. Campbell, Supt., called election for July 28 on \$10,000 bonds.

**Md., Hagerstown**—Washington County Comms. receive bids July 15 for \$150,000, 4½%, \$1,000 denom. school bonds.

**Missouri—Road**—State Bd. of Fund Comms., Jefferson City, receives bids August 1, for \$5,000,000 about 4½% bonds of \$75,000,000 bonds previously voted.

**Mo., Holcomb**—Holcomb Consolidated School Dist. plans \$10,000 bond election.

**Mo., Ozark**—Ozark Consolidated School considering \$40,000 bond election; recently defeated bond issue.

**N. C., Greensboro**—City, E. G. Sherrill, Clk., considering issuing \$240,000 refunding bonds; \$65,000, sewer; \$75,000, street; \$100,000, water.

**N. C., Winston-Salem**—City, Bd. of Aldermen, authorized \$50,000 bond issue for refunding street improvement bonds of Town of Salem.

**Okl., Arapaho—Road**—Custer County, G. E. Gannaway, Commr., Clinton, readvertise about July 17 for bids on \$900,000 road bonds.

**Okl., Carnegie**—Carnegie School Dist. plans bond election soon.

**Okl., Oklahoma City**—City, M. Peshek, Jr., Clk., plans bond election for paving and viaduct, George F. Brown, City Engr.

**Okl., Oklahoma City**—City, E. M. Fry, Mgr., reported, votes soon on \$6,173,000 bonds; \$1,050,000, sewage disposal plant; \$1,250,000, main storm sewers; \$150,000, main sanitary sewers; \$525,000, water main extensions; \$400,000, water storage tanks; \$100,000, filter plant extensions; \$100,000, water plant extensions; \$50,000, clarifier; \$48,000, clear well; \$2,500,000, Wolfe Creek Reservoir; George F. Brown, City Engr.

**Okl., Westville**—City voted \$40,000 water and sewer bonds.

**Tenn., Knoxville**—City, George Dempster, Mgr., will not call election Aug. 7 on \$300,000 bonds for auditorium. 6-12

**Tenn., Trenton**—Road—Gibson County voted \$500,000 bonds. 6-26

**Tex., Amarillo**—Courthouse — Potter County Comms. plan calling election soon on \$400,000 bonds.

**Tex., Dalhart**—City, Sam Marks, Sec., votes July 21 on \$50,000 bonds; \$20,000, street; \$10,000, sewer; \$20,000, funding.

**Tex., Dallas**—City Comsn., J. Waddy Tate, Mayor, plans receiving bids soon for \$3,500,000 bonds; \$150,000, courthouse; \$250,000 street paving; \$200,000, street opening and widening; \$350,000, revolving fund; \$75,000, underpass; \$450,000, public school; \$25,000 industrial school; \$150,000, park; \$300,000, sanitary sewer.

**Tex., Dumas**—Moore County voted \$400,000 bonds; \$150,000, courthouse; \$250,000, road. 6-12

**Tex., Fort Stockton**—Pecos County, C. E. Casebire, Judge, opens bids July 14 from for \$300,000 to \$1,000,000 road bonds; \$1000 denom.

**Tex., Gainesville**—City voted \$55,000 school bonds.

**Tex., Goliad**—Goliad County Judge, J. A. White, advises no election is being considered to vote \$25,000 hospital bonds; lately noted considering bond election. 5-15

**Tex., Johnson City**—Road—Blanco County votes July 12 on \$15,000 bonds.

**Tex., Lefors**—Road—Gray County votes August 2 on \$3,500,000 bonds. 6-5

**Tex., Lubbock**—City plans selling \$95,000

bonds; \$60,000, storm sewer; \$35,000, airport.

**Tex., Marfa**—Paving—City votes July 10 on \$175,000 bonds.

**Tex., Mineola**—City, Jonathan Russell, Mayor, plans \$25,000 paving bond election.

**Tex., Karnes City**—Karnes County, Thomas B. Smiley, County Judge, receives bids July 14 for \$107,000, 5% bonds; \$47,000, Road Dist. No. 1; \$60,000, Road Dist. No. 4.

**Tex., Pecos**—Reeves County, H. N. McKeever, County Judge, plans selling soon, \$75,000, 5% Road Dist. No. 1 bonds.

**Tex., Tyler**—Comms. Court of Tyler County, J. E. Sturrock, Judge, receives bids July 15 for \$64,000 Road Dist. No. 1 bonds; address bids County Clerk, Woodville, Texas.

**Tex., Wellington**—Collingsworth County defeated \$420,000 road bonds; R. H. Templeton, Judge.

**Va., Bristol**—City Council plans selling \$100,000, not to exceed 5½% street improvement bonds.

**Va., Norfolk**—Norfolk County Board of Drainage Comms., 622 Law Bldg., receives bids July 10 for \$180,000 Butts Road Drainage District 3 bonds; John G. Wallace, Chmn.

**W. Va., Ripley**—Jackson County Union Road District to call special election on Aug. 5 on \$30,000 road bonds; interest not to exceed 6%; \$500 denom.

**W. Va., Ripley**—Jackson County Union Road Dist. votes Aug 5 on \$30,000 bonds.

### Bond Issues Sold

**Ark., Hot Springs**—City sold \$46,000, 6% paving bonds to American Exchange Trust Co., Little Rock, at 100.81

**Ark., North Little Rock**, Little Rock—North Little Rock School Bd., W. E. Phipps, Supt. of Schools, sold \$100,000 bonds to W. B. Worthen & Co., Little Rock, at 95%. 6-19

**La., Lake Charles**—Bd. of Comms., Calcasieu Drainage Dist. No. 3 sold \$85,000 bonds to Calcasieu National Bank, Lake Charles, at par and accrued interest. 6-5

**La., Shreveport**—Caddo Parish School Dist. No. 3 sold \$150,000 school improvements bonds to City Savings Bank & Trust Co. and First National Bank, at 100.033; St. Prescott, Wright, Snider Co., Kansas City, and Boatmen's National Co., St. Louis.

**Mo., Independence**—Jackson County sold \$2,000,000 4½%, road and bridge bonds at 100.557 to syndicate composed of First Union Trust & Savings Bank, Continental Illinois Co. and First Detroit Co., all Chicago, Prescott, Wright, Snider Co., Kansas City, and Boatmen's National Co., St. Louis.

**Miss., Winona**—Montgomery County Special Consolidated School Dist. sold \$50,000, 5½% bonds to I. B. Tigrett & Co., Memphis, Tenn., at \$830 premium.

**North Carolina**—State of North Carolina, Capt. Nathan O. Berry, State Treas., Raleigh, sold \$2,000,000, 2¾% highway anticipation notes to Page Trust Co., Aberdeen.

**N. C., Concord**—Cabarrus County sold \$60,000 sewer and street bonds to Braunsforth & Co., Toledo, Ohio, at 100.17; 5%.

**Tenn., Memphis**—City, D. C. Miller, Clk., sold \$860,000 improvement bonds at 100.99 to Bankers Co., New York, and American National Co., Nashville, Tenn., \$851 premium; \$400,000, 4½% improvement; \$460,000, 4¾% street.

**Tenn., Morristown**—City, Gay Clark, Recorder, sold \$30,000 school (colored) bonds to Caldwell & Co., Nashville, at par and \$500 premium; \$1000 denom.

**Tenn., North Chattanooga**, Chattanooga—First National Bank of Chattanooga, reported, purchased \$51,557, 6% sidewalks assessment bonds at \$1565 premium.

**Tex., Alpine**—City, M. H. Moarman, Sec., sold \$121,000, 5½%, refund street improvement warrants to Van H. Howard & Co., San Antonio, at par; \$1000 denom.

**Dalhart**—Dallam County Comms. sold \$50,000 bonds to D. E. Dunne & Co., Wichita, Kansas; \$20,000 street; \$20,000 funding; \$10,000 sewer extension.

### Building and Loan Associations

**Mo., St. Louis**—Continental Savings, Building & Loan Assn., 2540 Olive St., capital \$1,000,000, organized by Maurer-Ghio-Reffa Realty Co., Inc., as subsidiary organization; Martin A. Reffa, Pres.; Joseph W. Maurer, Sec.-Treas.

### New Financial Corporations

**Ga., Metter**—Metter Banking Co., capital \$25,000, chartered; P. Q. Collins, H. A. Kennerd, W. E. Simmons.

**Ky., Eminence**—Farmers Deposit Bank of Eminence, Farmers & Drovers Bank Bldg., capital \$40,000, formed by consolidation of Farmers & Drovers Bank and Deposit Bank, both Eminence.

**Va., Charles City**—Charles City County Bank, capital \$25,000, chartered; Roger E. Brooke, Pres., Hopewell.

**W. Va., Morgantown**—Bank of Monongahela Valley, formed by merger of Bank of Monongahela Valley, J. H. McGrew, Pres., Union Bank and Trust Co., Edw. G. Donley, Pres., and Federal Savings and Trust Co., E. D. Tumli, Pres., with combined capital, \$5,700,000, and resources over \$3,000,000.

**Calcasieu National Bank of Southwest Louisiana**, Frank Roberts, Pres., Lake Charles, increased capital, \$2,000,000 to \$2,300,000, including capital and surplus of Calcasieu Investment Co., owned and controlled by bank; changed name to Calcasieu National Bank.

**Central Union Bank of South Carolina**, of Columbia and Rock Hill, W. P. Blackwell, Sec., plans increasing capital \$600,000 to \$1,000,000.

**Elsmere Savings Bank**, Stanley Chrisman, Pres., Elsmere, Erlanger, Ky., plans merging with Erlanger Citizens Bank, C. T. Davis, Pres., Erlanger, Ky.

**McDowell County National Bank**, I. J. Rhodes, Pres., acquired First National Bank, D. J. F. Strother, Pres., all Welch, W. Va., total assets over \$5,500,000.

**National Savings Certificate Co. of Georgia**, Bayne Gibson, head of Georgia Dist., Atlanta, opened offices in Macon, Ga., July 1 with Edmund W. Hurt, Dist. Mgr.

**North Carolina Industrial Bank**, subsidiary of North Carolina Bank & Trust Co., of Greensboro, N. C., will open branch bank soon in Yarborough House Bldg., Fayette St., Raleigh.

**Stockholders of Farmers National Bank**, Oklahoma City, Okla., voted to change name to City National Bank and Trust Co.

**Union Bank & Trust Co.**, Michael Cody, Pres., Montgomery, Ala., reported, increased capital, \$100,000 to \$200,000.

### \$2,000,000 Road Notes Sold

**Raleigh, N. C.**—Serial bond anticipation notes in the amount of \$2,000,000 have been sold by North Carolina to the Page Trust Co., Aberdeen, N. C., at an interest rate of 2¾ per cent, the lowest in the history of the state. The notes are a part of a \$4,000,000 issue authorized by the Legislature of 1927.

### \$320,000 Bridge Contract

**Gainesville, Tex.**—Contract has been awarded by the Texas Highway Commission, Austin, to the Missouri Valley Bridge & Iron Co., St. Louis, at \$320,817, for a concrete and steel bridge across the Red River between Gainesville and Marietta, Okla. The award is subject to approval by the Oklahoma Highway Commission. The bridge will be located on United States highway No. 77 and will consist of seven 210-foot spans, and two 36-foot I beam spans, carrying a 22-foot roadway.

## Corporate Financing Arranged

### Mergers and Reorganizations Effectuated

With connections seeking extensive outlets in constructive financing in the South, this announcement of facilities now available to Southern business houses embraces a most cordial invitation to investigate the solutions offered in response to capital needs. Capital furnished for both new and old enterprises.

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We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Specialty.

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## Manufacturing in the South

is growing at an amazing rate. Over six billion dollars are spent annually for materials, supplies, fuel and power to operate Southern factories. The utilization of its power resources; great hydroelectric sites; fuel supply of coal, lignite, gas and oil is rapidly advancing Southern industry.

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BALTIMORE, MARYLAND

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INCLUDING CITY, COUNTY, SCHOOL,  
PAVING, ROAD AND DRAINAGE

The Hanchett Bond Co. Inc.

39 SOUTH LA SALLE ST., CHICAGO

## "The Early 1880's in Baltimore"

Southern men and women who lived in, or visited Baltimore in the period when this Company was established—which was the year of 1884—will be interested, we believe, in our anniversary book "The Early Eighties: Sidelights on the Baltimore of forty years ago." A copy will be sent upon request.

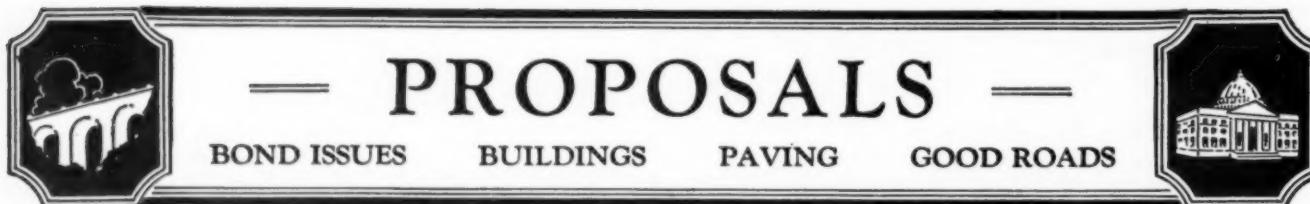
MERCANTILE TRUST COMPANY  
OF BALTIMORE

Resources \$24,000,000 A. H. S. POST, Pres. F. G. BOYCE, Jr., Vice-Pres.

## AT YOUR SERVICE IN BALTIMORE

  
MARYLAND  
TRUST COMPANY  
Northwest Corner  
Calvert and Redwood Streets

MEMBER FEDERAL RESERVE SYSTEM



Bids close August 5, 1930.

U. S. Engineer Office, 300 Custom House, Baltimore, Md. Sealed proposals will be received here until 3 P. M., Eastern Standard Time, August 5, 1930, and then publicly opened, for dredging approximately 1,174,341 cubic yards of material to a minimum depth of 37 feet over a width of 300 feet in Cut-off and a part of the Brewerton sections of channel leading to Baltimore, Maryland.

Bids close July 16, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., June 25, 1930.—SEALED PROPOSALS will be opened in this office at 3 P. M. July 16, 1930, for furnishing all labor and material required for new heating boiler in the U. S. Postoffice and Court House at Charlottesville, Va. Drawings and specifications may be obtained from the custodian at the U. S. Postoffice and Court House at Charlottesville, Va., or at this office, in the discretion of the Supervising Architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close July 18, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., June 28, 1930.—SEALED PROPOSALS will be opened in this office at 3 P. M., July 18, 1930, for furnishing all labor and material required for new heating boiler, etc., in the U. S. post office at Dublin, Ga. Especial attention is called to the fact that the right is reserved to consider both time for completion as well as price in awarding the contract. Drawings and specifications may be obtained from the custodian at the U. S. post office at Dublin, Ga., or at this office, in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close July 31, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., July 2, 1930.—SEALED BIDS will be opened in this office at 3 P. M., July 31, 1930, for certain changes for elevator hatchway, etc., in connection with the extension and remodeling (except elevator) of the U. S. Postoffice, Court House, etc., at Elmira, N. Y. The work contemplates certain changes incident to a new elevator. Drawings and specifications may be obtained from the custodian of the building or at this office, in the discretion of the Supervising Architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close August 4, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., July 7, 1930.—SEALED BIDS will be opened in this office at 3 P. M., August 4, 1930, for the construction of the U. S. Postoffice at Peekskill, N. Y. Drawings and specifications, not exceeding six sets, may be obtained at this office, in the discretion of the Supervising Architect, by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

Bids close July 25, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., June 27, 1930.—SEALED BIDS will be opened in this office at 3 P. M. July 25, 1930, for the construction of the U. S. P. O. at Kingsport, Tenn. Drawings and specifications, not exceeding six sets, may be obtained at this office, in the discretion of the Supervising Architect, by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

#### GENERAL INFORMATION

##### About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday.  
FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

##### THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

*The rate is the same for both publications—35 cents a line each insertion.*

Bids close July 15, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., June 17, 1930.—SEALED PROPOSALS will be opened in this office at 3 P. M. July 15, 1930, for furnishing all labor and material required for repairs to mechanical equipment in U. S. Treasury Annex No. 1 and Auditors' Building at Washington, D. C. Drawings and specifications may be obtained from this office, in the discretion of the Supervising Architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close July 22, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., June 24, 1930.—SEALED PROPOSALS will be opened in this office at 3 P. M. July 22, 1930, for furnishing all labor and material required for the installation of additional toilet rooms, nurses' quarters, in the U. S. Marine Hospital at Norfolk, Va. Drawings and specifications may be obtained from the custodian at the U. S. M. H. at Norfolk, Va., or at this office, in the discretion of the Supervising Architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close July 28, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., June 30, 1930.—SEALED BIDS will be opened in this office at 3 P. M., July 28, 1930, for the construction of a part 2-story and basement U. S. Postoffice building, approximately 3500 square feet ground area, at Union Springs, Ala. Drawings and specifications, not exceeding six sets, may be obtained at this office, in the discretion of the Supervising Architect, by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

Bids close July 29, 1930.

##### Bascule Span

DEPARTMENT OF PUBLIC WORKS  
STATE OF MARYLAND  
STATE ROADS COMMISSION

##### NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for a single leaf bascule span superstructure as follows:  
Queen Anne's County, Contract No. Q-63-28  
—A single leaf bascule span superstructure, overhead counterweight type, clear channel of 50 ft. 0 in., with a 20 ft. 0-in. clear roadway, at Kent Island Narrows on the road from Queenstown to Love Point in Queen Anne's County. Plans to be prepared by bidder. Will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M., E. S. T., on the 29th day of July, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 3rd day of July, 1930.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

Bids close July 22, 1930.

**Virginia Highway Work**

Richmond, Va.

Tuesday, 10 A. M., office of the Va. Dept. of Highways, Richmond, Va. Rt. 31, Proj. 88, 2-25' Steel Beam Spans, Cu. Yds. A Conc. 82, B Conc. 154, Lbs. Reinf. Steel 11,000, Struct. Steel 45,000. Rts. 23 and 216, Proj. 435-537, 4 Mi. Mac., Sq. Yds. Mac. 44,888, Cu. Yds. Excav. 31,792, Cu. Yds. A Conc. 248,5, B Conc. 137, Lbs. Reinf. Steel 32,686. Rt. 800, Proj. 642, 7.5 Mi. Gr. and Dr. Cu. Yds. Excav. 141,928, Lin. Ft. Pipe 2374, Cu. Yds. A Cone. 680, B Cone. 176 and 3 Brs. Rt. 502, Proj. 651A, 10 Mi. Gr. and Dr. Cu. Yds. Excav. 72,511, Cu. Yds. A Cone. 290, B Cone. 157, Lbs. Reinf. Steel 20,058. Rt. 607, Proj. 656, 9.6 Mi. Gr. and Dr. Cu. Yds. Excav. 103,510, Lbs. Reinf. Steel 5402. Rt. 306, Proj. 590, 11.7 Mi. Soil, Cu. Yds. Soil 38,406, Acres Cl. and Grub. 50, Cu. Yds. Excav. 93,098, Cu. Yds. A Conc. 44.3, B Conc. 426.3. Details obtainable upon request.

Bids close July 15, 1930.

**Maryland Highway Work**DEPARTMENT OF PUBLIC WORKS  
STATE OF MARYLAND  
STATE ROADS COMMISSION

## NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building nine sections of State Highway as follows:  
Baltimore City, Cont. No. BC-91-72—One section of State Highway along Frederick Road from Yale Avenue to Beechfield Avenue, a distance of 0.44 mile (sheet asphalt).  
Cecil County, Cont. No. Ce-80-28—One section of State Highway from Port Deposit to Conowingo, a distance of 4.53 miles (concrete).  
Charles County, Cont. No. Ch-89-34—One section of State Highway from Port Tobacco toward Chapel Point, a distance of 2.0 miles (gravel).  
Frederick County, Cont. No. F-137-54—One section of State Highway from the end of Cont. No. F-105 West of Licksville toward Point of Rocks, a distance of 7.0 miles (concrete).  
Frederick County, Cont. No. F-149-511—One section of State Highway along the Frederick-Thurmont Road, from Harmony Grove to the Creagerstown Road, a distance of 6.0 miles (concrete and concrete shoulders).  
Garrett County, Cont. No. G-59-62—One section of State Highway along the Lock Lynn-Gorman Road from end of Cont. No. G-40 toward Gorman, a distance of 0.2 mile (concrete).  
Montgomery County, Cont. No. M-156-311—One section of State Highway along Wilson Lane from end of con. shoulders near Bethesda toward Glen Echo, a distance of 1.0 mile, and along Bradley Boulevard from Wilson Lane toward Leland's Corner, a distance of 1.0 mile, making a total distance of 2.0 miles (concrete shoulders).  
Prince George's County, Cont. No. P-122-84—One section of State Highway from end of P-94 south of Horsehead through Aquasco to the Charles County line, a distance of 3.67 miles (gravel).  
St. Mary's County, Cont. No. SM-66-82—One section of State Highway from the Abell Road toward Oakley, a distance of 1.0 mile (gravel).

Will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M., E. S. T., on the 15th day of July, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the bank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 1st day of July, 1930.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

Bids close July 21, 1930.

**Sanitary Sewer Mains and Laterals**

Greenville, Miss.

Sealed proposals will be received by the City Council of the City of Greenville, Mississippi, until one (1) o'clock P. M. on the twenty-first (21st) day of July, 1930, for the construction of Sanitary Sewer Mains and Laterals.

The Mains and Laterals consist of:  
Approximately 2133 feet 8-inch Clay Sewer Pipe.  
Approximately 2959 feet 10-inch Clay Sewer Pipe.  
Approximately 466 feet 12-inch Clay Sewer Pipe.  
Approximately 1666 feet 15-inch Clay Sewer Pipe.  
Approximately 450 feet 18-inch Clay Sewer Pipe.  
Approximately 775 feet 21-inch Clay Sewer Pipe.  
Approximately 1292 feet Trench Excavating, 19 to 16 feet deep.  
Approximately 2065 feet Trench Excavating, 14 to 16 feet deep.  
Approximately 386 feet Trench Excavating, 12 to 14 feet deep.  
Approximately 1689 feet Trench Excavating, 10 to 12 feet deep.  
Approximately 3016 feet Trench Excavating, 8 to 10 feet deep.  
21 Manholes, 120 Wye Branches, 4 inches off 8 inches. 61 Chimney Pipes.

Monthly payments will be made in cash. A certified check or bidder's bond of Ten per cent (10%) of the proposal shall accompany each proposal.

Plans and specifications may be obtained from the office of the City Engineering Department by making a deposit of Fifteen Dollars (\$15.00). Half of the deposit will be refunded upon return of the plans and specifications within ten (10) days after the date of letting.

GUY DREW,  
City Clerk.CITY ENGINEERING DEPARTMENT,  
Office, City Hall,  
City of Greenville, Mississippi.

Bids close July 29, 1930.

**Notice for Proposals on Utilities**

Beaufort, N. C.

Sealed proposals will be received by the City of Beaufort, North Carolina, at the office of the City Clerk at two (2) o'clock P.M. on July 29, 1930, for the purchase of Electric and Water Systems now owned and operated by that city.

Should an acceptable proposal be received, this will be submitted to the voters for ratification.

A certified check in an amount of not less than Five Thousand Dollars (\$5000.00) is required, and the right is reserved to reject any or all proposals.

HON. K. P. B. BONNER, Mayor.

Further information may be obtained from the undersigned.

UTILITIES ENGINEERING & MANAGEMENT COMPANY,  
917 Johnston Building,  
Charlotte, N. C.

Bids close July 29, 1930.

**Notice for Proposals on Utilities**

Morehead City, N. C.

Sealed proposals will be received by the City of Morehead City, North Carolina, at ten (10) o'clock A. M. on July 29th, 1930, at the office of the City Clerk for the purchase of Electric and Water Systems now owned and operated by that city.

Should an acceptable proposal be received, this will be submitted to the voters for ratification.

A certified check in an amount of not less than Five Thousand (\$5000.00) Dollars is required, and the right is reserved to reject any or all proposals.

HON. K. P. B. BONNER, Mayor.

Further information may be obtained from the undersigned:

UTILITIES ENGINEERING & MANAGEMENT COMPANY,  
917 Johnston Building,  
Charlotte, N. C.

Bids close July 21, 1930.

**Sewage Pumping Station**

Greenville, Miss.

Sealed proposals will be received by the City Clerk of the City Council of the City of Greenville, Mississippi, until one (1) o'clock P. M. on the twenty-first (21st) day of July, 1930, for the construction of a Sewage Pumping Station.

The Pumping Station to consist of the following:

ITEM 1. 532 cubic yards of earth excavation.  
ITEM 2. 198 cubic yards of Class "A" Concrete.

ITEM 3. 21,000 pounds reinforcing steel.  
ITEM 4. Two (2) sewage pumps, 800 G.P.M. against 74 feet head and all necessary piping, valves and fittings installed and complete ready to operate.

ITEM 5. Two (2) motors of rated speed and horsepower to coordinate with the above pumps.

ITEM 6. Automatic starting equipment and necessary electrical apparatus and wiring as shown on plans for the above motors.

ITEM 7. Pump House complete, 25'x25', with Johns-Manville Corrugated Sheet Asbestos roof and other details of construction as shown on the plans.

ITEM 8. 7800 feet of 14-inch Class "A" cast-iron pipe in place.

ITEM 9. 7800 feet excavation 4'-5' in depth.

Monthly payments will be made in cash. A certified check or Bidder's Bond for ten per cent (10%) of the proposed contract price shall accompany each proposal.

Plans and specifications may be obtained from the office of the City Engineering Department by making a deposit of \$15.00. Half of this deposit will be refunded upon return of same within 10 days after letting.

GUY DREW,  
City Clerk.CITY ENGINEERING DEPARTMENT,  
Office, City Hall,  
Greenville, Mississippi.

Bids close July 21, 1930.

**Additions and Alterations to City Hospital,**

Columbus, Georgia.

Sealed bids, addressed to "City Manager, Columbus, Georgia," will be received until the hour of ten o'clock A. M., July 21, 1930 (at which time the bids will be publicly opened at the City Commission Chamber in said city), for the General Contract Work; Plumbing; Heating; Electrical; Elevator and Lift; and Kitchen and other Equipment in the matter of the additions and alterations to be made to the City Hospital, Columbus, Georgia.

Each bid must be accompanied by a certified check in the amount of Two (2) per cent of the base bid on each of the above trade items, or by bidder's bond for ten (10) per cent of said base bid, said certified check or bidder's bond to be payable to City of Columbus, Georgia, as a guarantee that, if awarded the contract, the successful bidder will within ten (10) days of such award enter into the proposed contract and will execute to said city a bond in the amount of the contract price; said contractor's bond to be conditioned for the faithful performance of the contract, and shall be in accordance with the provisions of the Act of the General Assembly of Georgia, Acts 1916, pages 94 to 97 (Park's Code of Georgia, Section 389, et seq.). Said bidder's bond and said contractor's bond shall be at the expense of the contractor, the surety to be an approved surety company legally authorized to do business in the State of Georgia, having an agency that has been maintained by said surety company in said city for at least one year, and which has paid all license and other taxes required by the city.

Drawings and specifications may be seen at the office of E. C. Wachendorff, Architect, 1010 Standard Building, Atlanta, Georgia, and at the office of T. F. Lockwood, Architect, 211 Murrah Building, Columbus, Georgia. Contractors may obtain drawings and specifications from said E. C. Wachendorff, Architect, by accompanying their application with certified check, payable to him, in the sum of \$25.00 for each of said trade items. Failure on the part of the contractor to make a bona fide bid on the work, or failure to return the drawings and specifications to said Architect, will forfeit the amount of said check. The cost of printing and shipping drawings and specifications will be deducted from all such deposit checks.

The City of Columbus reserves the right to reject any or all bids, and also reserves the right to waive any informalities in bids.

In the event that no bid is received which is satisfactory to the city, the city shall have the right, without further bidding or advertisement, to negotiate with the two lowest bidders on any one or more trade items for modifications in the plans and specifications so as to enable the city to enter into a contract with either of said two lowest bidders for such modified plans of construction at a price satisfactory to the city.

H. B. CRAWFORD,  
City Manager.

# CLASSIFIED OPPORTUNITIES

## MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

**FLORIDA GULF COAST**, thousands of acres; timber, railroads, also two best large industrial sites in Jacksonville. Railroads and water. HERBERT McINTIRE, Owner, Gainesville, Fla.

**FOR SALE**—Large water power at sacrifice to quick buyer. Beautiful 170-acre lake. Factory buildings, warehouse, large yard. For further particulars address CHAS. VAUGHN (Owner), Glen Rock, Pa.

### IRON ORE AND MANGANESE FOR SALE.

A Brown Iron Ore and Manganese property in Murray County, Georgia, near Tenn. Line. F. A. POWELL, Ft. Myers, Florida.

### LIMESTONE QUARRY

**LIMESTONE QUARRY** and complete equipment, including crusher 400 mesh; finished product. Full information on request. Price attractive.

G. Q. MILWEE,  
408 Stahlman Bldg., Nashville, Tenn.

### PLASTIC CLAY DEPOSIT

**FOR SALE OR ROYALTY**—Deposit of very plastic clay, dark and light colors; convenient for rail and deep water transportation. For samples and full description Pierre Robert, Scotia, Hampton Co., S. C.

### PULP WOOD ACREAGE

**PULP WOOD**—Now is the time to buy pulp wood land cheap. Have considerable acreage, with good stand of timber. Can be bought in fee simple at close price.

P. O. BOX 279,  
SUMMERTON, S. C.

### TIMBER AND TIMBER LAND

**WE HAVE EXCLUSIVE** sales privilege for more than 500,000 acres of Florida land at sacrifice prices. Also large areas in Georgia and South Carolina. Desirable second growth pine lands; agricultural lands adapted to tung oil and citrus crops, grazing lands, etc. To share in the assured future of Florida and the South INVESTIGATE NOW.

THE JAMES D. LACEY COMPANY,  
1409 Barnett Bldg., Jacksonville, Fla.

## FARM, FRUIT AND TRUCK LANDS

### FLORIDA

#### FLORIDA BARGAIN!

Now is the time to buy in Florida. Sixteen acres bearing orange and grapefruit grove, with splendid residence, outbuildings and artesian well, 60 acres first class land. Well located, with water and highway frontage; loss of wife reason for sacrifice. Price \$11,000.00; terms if desired.

P. JOHN HART REALTY CORP.,  
P. O. Arcade,  
Fort Myers, Fla.

### LOUISIANA

**ST. CHARLES PARISH, LOUISIANA**, offers opportunities in cattle ranches, agricultural and industrial sites. St. Charles Bank & Trust Co., Sellers, La.

### VIRGINIA

**SOUTH ISLES PLANTATION**  
830 acres, 450 acres farming and pasture land, about 300 acres fertile river bottoms, balance woodland and timber. Large, attractive mansion in grove of several acres handsome box wood, shrubbery, flowers and many varieties of trees. Excellent stock barn, tenant house, hog sheds and other outbuildings. Near Lynchburg in good community. Price \$44,000. Full details and illustrated catalogue of other attractive places upon request.

GEO. V. VENABLE & CO., Lynchburg, Va.

## Rates, Terms and Conditions

**RATES:** 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to a line. When the advertisement contains a number of long words proper allowance should be made.

### Rates for Special Contracts:

100 lines 28c a line  
300 lines 26c a line  
500 lines or more 25c a line

**TERMS:** For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

**CONDITIONS:** No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

## SOUTHERN HOMES

**OVER 500 ACRES**, spring, brook, log cabin, many long leaf pines. Estate preserve. Fine fish pond "full of fish." Low acreage price. G. F. ARCHER, Aiken, S. C.

### SOUTHERN HOMES

in the best city in the Carolinas. \$10,000 to \$75,000, according to size and location.

F. C. ABBOTT & CO.,  
Charlotte, N. C.  
32 years in Charlotte Real Estate.

## BUSINESS OPPORTUNITIES

**FOR SALE**—To right party profitable hamper and veneer mill. Located in Florida. Plenty of timber available. Address No. 8081, care Manufacturers Record.

**LONG TERM LOANS**, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

**300% PROFIT** for the party who will finance the development of a large Citrus Fruit Project in the Rio Grande Valley. For details address

A. V. BROWN, Harlingen, Texas.

**WANTED**—A sales manager who can invest \$25,000 to \$50,000 in well-equipped, electric-powered manufacturing business with established trade, located in the State of Georgia. No. 9025, care of Manufacturers Record.

**MANUFACTURERS**—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

**WANTED**—Reputable firm or person to exploit on national scale an invention. It is an improved and proven AMMONIA PRE-COOLER and ACCUMULATOR (patent applied for), which will increase, by 15% up efficiency of dairy, ice cream, fruit precooling and ice plants. Will pool entire interest as sole owner and experimental equipment valued at \$1500 or will accept \$4250 for everything. Mean business and this is someone's big opportunity. Prints and descriptive matter mailed.

H. C. FRIERSON,  
No. 508 First St. N.,  
Winter Haven, Fla.

## FINANCIAL

**MONEY WANTED**  
6, 7 and 8% Mortgage Loans on City, Town or Country property. Southern Land & Investment Co., Baton Rouge, Louisiana.

## INDUSTRIAL SURVEYS

**ENGINEERING REPORTS** on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,  
Woolworth Building New York City

## DEVELOPING AND ENGINEERING

### ORGANIZING—DEVELOPING—ENGINEERING

Engineering firm, widely experienced in investigating, organizing, developing, designing and supervising construction, solicit correspondence regarding development or extension of meritorious projects and existing industries, power plants and utilities. Address No. 8016, care Manufacturers Record.

## INDUSTRIES WANTED

**RIGHT AT THE SOURCE** of raw materials and with loyal, native, alert labor, SUMTER, SOUTH CAROLINA, affords exceptional opportunities for PROFITABLE manufacturing of furniture, toys and wood novelties. Fourteen such factories already located here. Also splendid openings for hosiery, silk and knitting mills. Certain valuable inducements to new industries. For information write Sumter Board of Trade.

## INDUSTRIAL PLANTS

**FOR SALE**—Manufacturing Plant of going concern. Need money for operating purposes. Will sign ten years' guaranteed lease at attractive rental. For full particulars address No. 8092, care of Manufacturers Record, Baltimore, Md.

**COMPLETE WOODWORKING PLANT**, suitable for furniture or other wood articles. Dry kiln, side track, with ample trained labor available. Can be bought for less than one-half reproduction value. First Securities Company, Chattanooga, Tenn.

### CANNING PLANT

Concrete building, 35x70, on lot 70x130, suitable for canning plant, located on S. A. L. Railway at Palmetto, Manatee County, in the heart of the fruit and vegetable section of Florida. For Sale. Write

JOHN W. JACKSON, Palmetto, Fla.

## FACTORY SITES

### FACTORY SITE ON DEEP WATER

If you are seeking an ideal deep water industrial location in Baltimore, Maryland, on one of the finest harbors in the world, see advertisement on page 92, June 19th issue of the Manufacturers Record.

W. S. CAHILL CO.,  
Key Highway and Webster Street,  
Baltimore, Md.

### PLANT SITE AND VILLAGE IN GEORGIA

Very desirable plant site on main line Central of Georgia Railroad, 25 miles from Macon, Georgia. Good location for hosiery, overalls, spinning, etc.; also wood working, furniture and stoves. Power plant available, with deep well and pumps, 100-foot tower and tank, sprinkler system and service lines installed. Fifty good houses, club house and store. In town of 1500 population. Plenty of labor available.

NASHVILLE INDUSTRIAL  
CORPORATION,  
Old Hickory, Tennessee.

## FACTORY BUILDINGS

ONE MODERN fireproof daylight manufacturing plant, steel and tile construction, size 100x140 feet, sixteen acres of land, 50,000-gallon concrete tank and tower, on Missouri Pacific Railroad; suitable for the manufacture of airplanes, metal and construction work, planing mill, oil well supplies, etc. Located one mile from city limits; low taxes and insurance. Attractive price; liberal terms.

ETHERIDGE BROTHERS COMPANY,  
230 Broadway, San Antonio, Texas.

## PATENT ATTORNEYS

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

FREE "PATENT PARTICULARS" Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F, Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

PATENTS—TRADEMARKS—COPYRIGHTS Charlotte office convenient to South. PAUL B. EATON, Registered Patent Attorney, 218 Johnson Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

EDWARD C. SASNETT, Atty. at Law, formerly a Principal Examiner in the U. S. Patent Office. I offer to inventors and manufacturers a strictly personal service based on twenty years' experience in patent work. McGill Building, Washington, D. C.

## AGENCIES WANTED

SALES REPRESENTATIVE—Large and valuable acquaintance with foundries, stove manufacturers, coal mines and supply houses in entire South wishes immediate connection; salary or commission. Highest references. Address W. J. BACH, 1139 So. 14th Street, Birmingham, Ala.

MANUFACTURER'S REPRESENTATIVE is available. Established concern will take on additional electrical or industrial line for New York territory. Address No. 9032, care of Manufacturers Record, Baltimore.

## REPRESENTATIVES WANTED

DEALERS WANTED to represent established incinerator company. Exclusive rights given in territories allotted. Address Economy Incinerator Co., Inc., Milwaukee, Wis.

IF YOU HAVE a following among steam boiler operators and are not afraid to work you can make good money by selling our Boiler Compounds on commission basis. We make water analysis and guarantee results on our Water and Metal Treatments. Write for particulars.

SOUTHERN PRODUCTS CORPORATION, New Orleans, La.

EXCLUSIVE AGENCY CONTRACTOR, Engineer or Lumber Company can build up attractive business by selling and erecting our nationally known line of roof structures. We wish to make connections in the Southern States, Kansas, Michigan, Wisconsin and the Dakotas. Address No. 9030, care Manufacturers Record.

## SITUATIONS WANTED

GRADUATE of high school and business college desires office job. Low salary. Good references.

GEO. MEYER, Newnan, Ga.

CIVIL ENGINEER, graduate, 16 years' engineering experience railroads, bridges, water works and buildings; good constr. supt.; active man. Resident Fla.; available now. No. 9035, care of Manufacturers Record.

## SALES CONNECTION WANTED.

Georgia or Southeast. Preferably office in Atlanta with some traveling. Experienced Automobiles, Hardware and kindred lines. Good executive and correspondent and can handle solicitations by mail where necessary. Compensation preferably salary and bonus. W. B. Thompson, Box 174, Jackson, Ga.

## MEN WANTED

WANTED—Salesman experienced in selling lumber or creosoted wood products. Address No. 9032, care of Manufacturers Record, Baltimore, Md.

## WANTED.

An experienced shale brick grader for smooth and rough texture face brick; give experience and references.

PLAINVILLE BRICK CO., INC.,  
Plainville, Ga.

REFRACTORIES SALESMAN for Texas by recognized Missouri producer having one of most complete lines available. Requires Texas residence. Splendid opportunity. Have your reply complete as to experience, references, etc. Address No. 9033, care Manufacturers Record, Baltimore.

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty years. Send only name and address for details.

R. W. BIXBY, INC.,  
103 Downtown Bldg., Buffalo, New York

## MACHINERY AND SUPPLIES

FOR SALE AT A BARGAIN—25 Horse-power Fairbanks-Morse single cylinder (Horizontal) Y-type, style H. 325 R.P.M. engine, with 22-in. direct drive friction clutch. Guaranteed 98% new. Gibbs Machine Co., Orlando, Fla.

## VALDURA PAINT

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 15 KW, 1800 RPM, 120/240 V. Gen. Elec.  
 50 KW, 1200 RPM, 2300 V., General Elec.  
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 Large stock motors. Write for list.  
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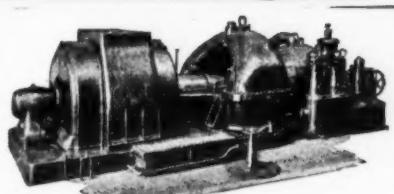
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2—627 HP Stirling Plant, modern stokers, auxiliaries

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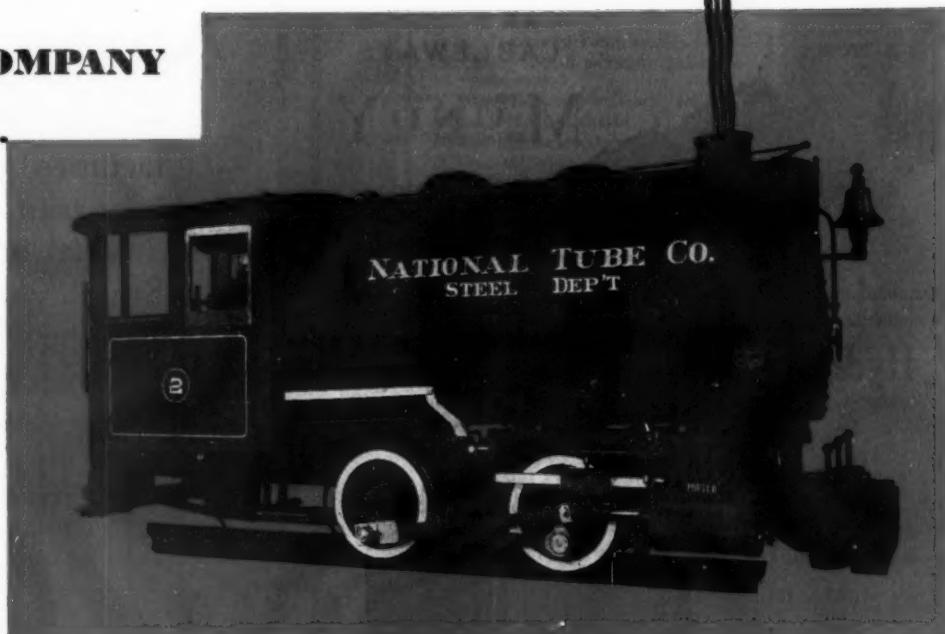
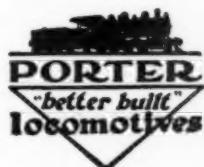
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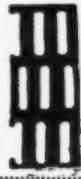
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SAUERMAN CABLEWAYS  
These machines dig, convey and  
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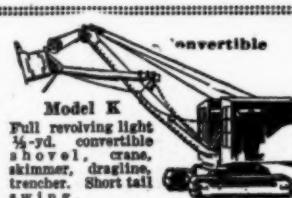
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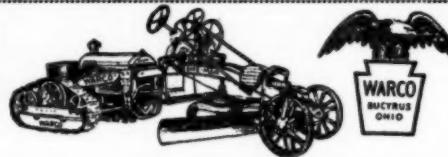
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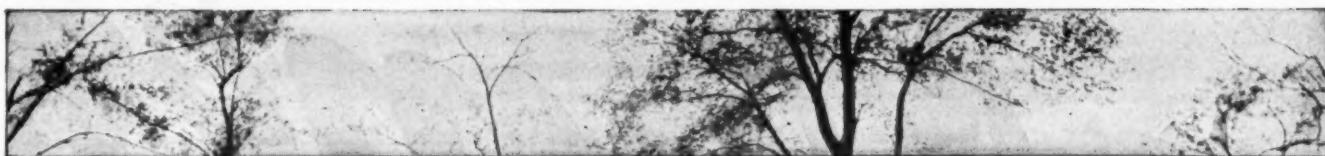
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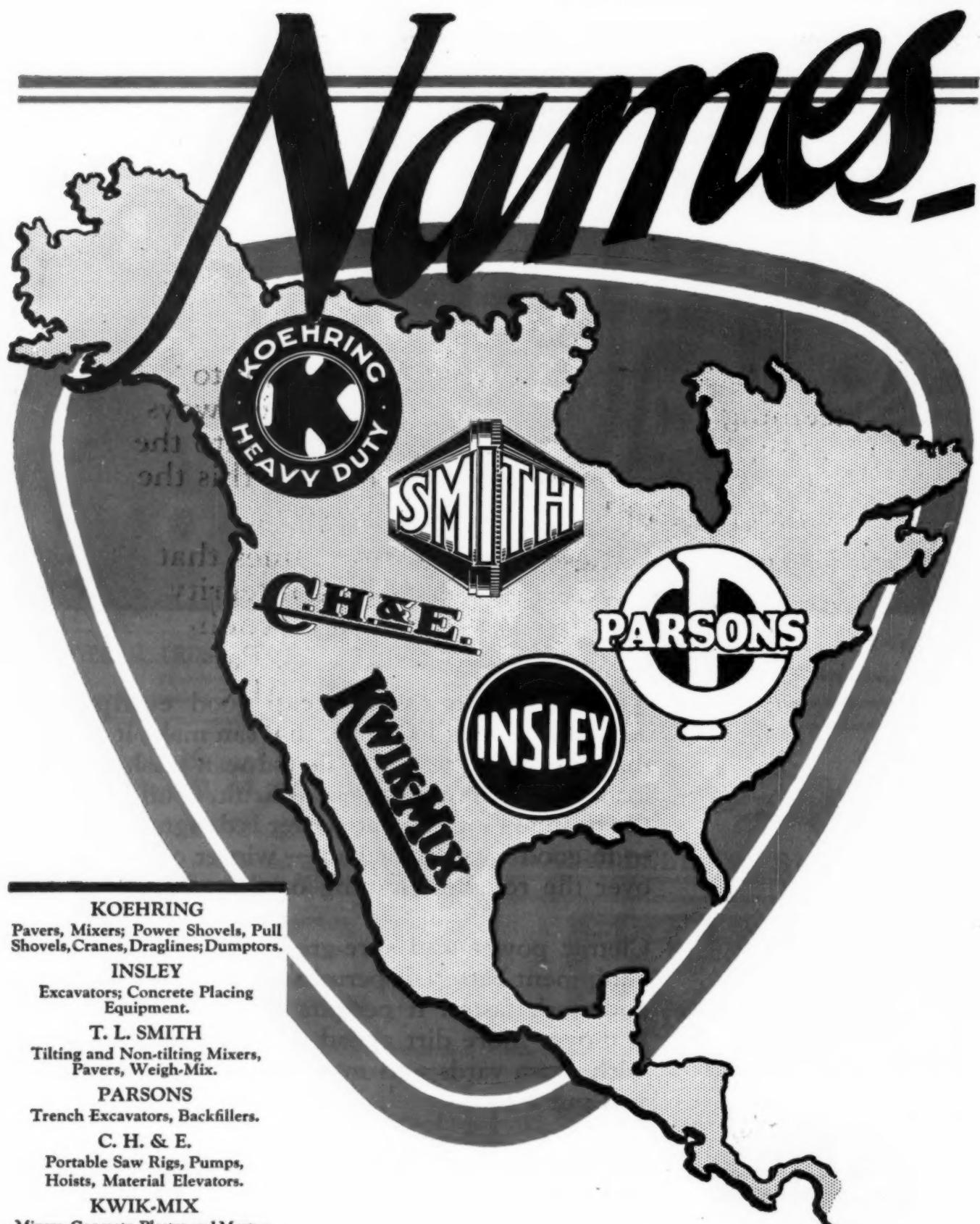
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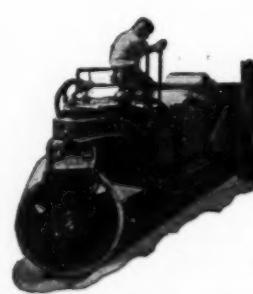
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Le Baron, Ernest T., Jacksonville, Fla.

**AERIAL MAPS and SURVEYS.**

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Hillman Machinery Co., Chicago, Ill.

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**AIR CONDITIONING SYSTEMS.**

Skinner Bros. Mfg. Co., St. Louis, Mo.

Swartzwout Co., Cleveland, Ohio.

**AIRPORTS.**

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Aluminum Co. of Amer., Pittsburgh.

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Washington, D. C.

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—(Golf Course, Landscape.)

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Spurr &amp; Lewis, Greensboro, N. C.

**ARCHITECTS' SUPPLIES.**

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District Brothers, Baltimore, Md.

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**ASH Removal Systems (Gates, Hoppers, Quenchers, etc.)**

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**Sluicing Systems.**

Allen-Sherman-Hoff Co., Phila., Pa.

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Allen-Sherman-Hoff Co., Phila., Pa.

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Le Baron, Ernest T., Jacksonville, Fla.

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Harnischfeger Corp., Milwaukee, Wis.  
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Timken Roller Bearing Co., Canton, Ohio.

Virginia Bridge &amp; Iron Co., Roanoke, Va.

Youngstown Sheet &amp; Tube Co., Youngstown, Ohio.

**BATTERIES (Storage.)**

Electric Storage Battery Co., Phila., Pa.

**BEAMS, CHANNELS, ANGLES.**

Belmont Iron Works, Philadelphia, Pa.

Carnegie Steel Co., Pittsburgh, Pa.

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Clele Mfg. Co., R. D. Newman, Ga.

Schofield's Sons Co., J. S., Mason, Ga.

Titusville Iron Works Co., Titusville, Pa.

Vogt Mch. Co., Henry, Louisville, Ky.

**BEARINGS (Anti-friction.)**

Delta Equipment Co., Philadelphia, Pa.

O'Brien Machinery Co., Philadelphia, Pa.

Randie Machinery Co., The, Cincinnati, O.

Zelnicker Supply Co., W. A., St. Louis.

**BEARINGS (Line Shaft.)**

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Timken Roller Bearing Co., Canton, Ohio.

**BEARINGS (Roller.)**

Hyatt Roller Bearing Co., Newark, N. J.

Timken Roller Bearing Co., Canton, Ohio.

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Diamond Chain &amp; Mfg. Co., Indianapolis.

Morse Chain Co., Bingham, N. Y.

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Charlotte Leather Belting Co., Charlotte, N. C.

Republic Rubber Co., Youngstown, Ohio.

**BELLING.**

Dixon Crucible Co., Jas., Jersey City, N. J.

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Angle Steel Stool Co., Plainwell, Mich.

**DRAWERS (Steel.)**

Angle Steel Stool Co., Plainwell, Mich.

**BENCHES AND TABLES.**

(Steel.)

Angle Steel Stool Co., Plainwell, Mich.

**BILLETS (Basic Open Hearth.)**

Gulf States Steel Co., Birmingham, Ala.

Republic Steel Corp., Youngstown, Ohio.

Tennessee Coal, Iron &amp; Railroad Co., Birmingham, Ala.

**BINS (Drill and Reamer.)**

Angle Steel Stool Co., Plainwell, Mich.

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Southern Drilling Co., Saltville, Va.

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**(Face.)**

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Dee Co., Wm. E., Oak Hill, Ohio.

Taylor Sons Co., Charles, Cincinnati.

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Wilson Corp., The J. G., New York.

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Patterson Co., W. W., Pittsburgh.

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National Blow Pipe &amp; Mfg. Co., Ltd., New Orleans, La.

**BLOW PIPE SYSTEMS.**

National Blow Pipe &amp; Mfg. Co., Ltd., New Orleans, La.

Skinner Bros. Mfg. Co., St. Louis, Mo.

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Bobcock &amp; Wilcox Co., The, New York.

Charleston Dry Dock &amp; Machine Co., Charleston, S. C.

Chattanooga Boiler &amp; Tank Co., Chattanooga, Tenn.

Cole Mfg. Co., R. D., Newman, Ga.

Combustion Engr. Corp., New York, N. Y.

Hedges Walsh Welding Co., Chattanooga, Tenn.

Lambard Iron Works &amp; Supply Co., Augusta, Ga.

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Titusville Iron Works Co., Titusville, Pa.

Vogt Mch. Co., Henry, Louisville, Ky.

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Delta Equipment Co., Philadelphia, Pa.

McClintic-Marshall Co., Pittsburgh, Pa.

Randie Machinery Co., The, Cincinnati, O.

Zelnicker Supply Co., W. A., St. Louis.

**BOILER SETTINGS.**

Harbison-Walker Refractories Co., Pittsb.

**Tubes.**

Boiler Tube Co. of America, Pittsburgh.

National Tube Co., Pittsburgh, Pa.

Ryerson &amp; Son, Inc., Jas. T., St. Louis and New York.

**Tubes (Charcoal, Iron.)**

Reading Iron Co., Reading, Pa.

**BOLTS, Rivets, Studs, Washers.**

Bethlehem Steel Co., Bethlehem, Pa.

Progressive Mfg. Co., Tarrington, Conn.

Republie Steel Corp., Youngstown, Ohio.

Russell, Burdsall &amp; Ward Bolt &amp; Nut Co., Port Chester, N. Y.

Ryerson &amp; Son, Inc., Jas. T., St. Louis and New York.

Virginia Bridge &amp; Iron Co., Roanoke, Va.

**(Track.)**

Swast's Steel Co., Williamsport, Pa.

**BOND BUYERS.**

Garraway &amp; Co., S. G., Chicago.

Handelt Bond Co., Inc., The, Chicago.

Law &amp; Co., A. M., Spartanburg, S. C.

Marx &amp; Co., Birmingham, Ala.

Mercantile Trust Co., Baltimore, Md.

Nuveen &amp; Co., John, Chicago, Ill.

Provident Savings Bank and Trust Co., Cincinnati, Ohio.

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Blaw-Knox Co., Pittsburgh, Pa.

Hayward Co., The, New York, N. Y.

Industrial Brewhouse Corp., Cleveland, O.

Kiesler Co., Jas. F., Chicago, Ill.

Owen Bucket Co., The, Cleveland, Ohio.

Stuehner Iron Works, G. L., Long Island City, N. Y.

**(Dredging, Excavating, Sewer, etc.)**

Hayward Co., The, New York, N. Y.

Monihan Mfg. Corp., Chicago, Ill.

Kiesler Co., Jas. F., Chicago, Ill.

Owen Bucket Co., The, Cleveland, Ohio.

Stuehner Iron Works, G. L., Long Island City, N. Y.

**(Elevator.)**

Hendrick Mfg. Co., Carbondale, Pa.

Webster &amp; Waller Mfg. Companies, Chicago, Ill.

**(Orange Peel.)**

Hayward Co., The, New York, N. Y.

**(Ore Handling.)**

Hayward Co., The, New York, N. Y.

Owen Bucket Co., The, Cleveland, Ohio.

Stuehner Iron Works, G. L., Long Island City, N. Y.

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**BUILDERS and Contractors.**  
Barstow & Co., W. S., Reading, Pa.  
Cowper Co., Inc., John W., Richmond, Va.  
Moyer Co., Tighman, Allentown, Pa.  
Stone & Webster, Inc., Boston, Mass.  
Thompson & Bros., T. C., Charlotte, N. C.  
White Engineering Corp., J. G., New York

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Belmont Iron Works, Philadelphia, Pa.  
Blaw-Knox Co., Pittsburgh, Pa.  
Braden Steel Corp., Tulsa, Okla.  
Butler Mfg. Co., Kansas City, Mo.  
Maryland Metal Building Co., Balt., Md.  
McClintic-Marshall Co., Pittsburgh, Pa.  
Nashville Bridge Co., Nashville, Tenn.  
Truscon Steel Co., Youngstown, Ohio.  
Virginia Bridge & Iron Co., Roanoke, Va.

**(Portable Sheet Metal.)**  
Braden Steel Corp., Tulsa, Okla.  
Butler Mfg. Co., Kansas City, Mo.  
Maryland Metal Building Co., Balt., Md.

**BULKHEADS.**  
Shore-Line Builders, Inc., Jacksonville, Fla.  
Snare Corp., Frederick, New York, N. Y.

**BULLDOZERS.**  
Trackson Co., Milwaukee, Wis.

**BUSHINGS (Brass and Bronze.)**  
Moccasin Bushing Co., Chattanooga, Tenn.

**BUSINESS METHODS.**  
Ernst & Ernst, New York, N. Y.

**CABINETS (Steel.)**  
Angie Steel Stool Co., Plainwell, Mich.

**CABLES (Stud Link.)**  
Woodhouse Chain Works, Trenton, N. J.  
**— and Wire (Electric.)**  
American Steel & Wire Co., Balt., Md.  
Oxonite Co., New York, N. Y.  
Hoobling's Sons Co., John A., Trenton, N. J.  
Western Electric Co., New York City.

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Broderick & Bascom Rope Co., St. Louis  
Lidgerwood Mfg. Co., Elizabeth, N. J.  
Sauerman Bros., Chicago, Ill.

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Grasselli Chemical Co., Inc., Birmingham, Ala.

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Bliss Co., E. W., Brooklyn, N. Y.

**CAR Loaders and Unloaders.**  
Barber-Greene Co., Aurora, Ill.  
Stephens-Adamson Mfg. Co., Birmingham, Ala.

**Pullers.**  
Webster & Weller Mfg. Companies, Chicago, Ill.

**CARS (Dump, Industrial, Logging and Mine.)**  
Atlas Car & Mfg. Co., The, Cleveland, O.  
Easton Car & Construction Co., Easton, Pa.  
Koppel Ind. Car & Equip. Co., Koppel, Pa.  
Southern Iron & Equipment Co., Atlanta,  
**— Steps (Safety.)**  
Irving Iron Works Co., Long Island City, N. Y.

**CASTINGS (Brass, Bronze and Aluminum.)**  
Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.  
Moccasin Bushing Co., Chattanooga, Tenn.  
Mountain States Steel Foundries, Parkersburg, W. Va.

**(Chilled Iron.)**  
Fuller Lehigh Co., Fullerton, Penna.

**(Gray Iron.)**  
Fuller Lehigh Co., Fullerton, Penna.  
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.  
Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.  
National Cast Iron Pipe Co., Birmingham, Ala.  
Rexnord Iron & Bridge Works, Inc., Roanoke, Va.  
Salem Fdry. & Mach. Wks., Salem, Va.  
U. S. Pipe & Foundry Co., Burlington, N. J.

**(Malleable Iron and Steel.)**  
Timken Roller Bearing Co., Canton, O.

**(Semi-Steel.)**  
Salem Fdry. & Machine Works, Salem, Va.

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Bethlehem Steel Co., Bethlehem, Pa.  
Crucible Steel Casting Co., Lansdowne, Del.  
Delaware Co., Pa.  
Deemer Steel Casting Co., New Castle, Del.  
Lenkheimer Co., Cincinnati, Ohio.

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Swenson Evaporator Co., Harvey, Ill.

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Milcor Steel Co., Milwaukee, Wis.

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Lehigh Portland Cement Co., New York.  
Louisville Cement Co., Louisville, Ky.  
Portland Cement Assn., Chicago, Ill.

**— "Guns."**  
Cement-Gun Co., Inc., Allentown, Pa.

**Machinery.**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

**CHAIN BLOCKS (See Blocks, Chain.)**

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Knoxville Iron Co., Knoxville, Tenn.  
Woodhouse Chain Works, Trenton, N. J.

**— (High Speed Roller.)**  
Diamond Chain & Mfg. Co., Indianapolis.

**— (Silent Drive.)**  
Diamond Chain & Mfg. Co., Indianapolis.  
Morse Chain Co., Ithaca, N. Y.

**— (Sprocket.)**  
Chain Belt Co., Milwaukee, Wis.  
Diamond Chain & Mfg. Co., Indianapolis.  
Morse Chain Co., Ithaca, N. Y.

**— (Welded.)**  
Woodhouse Chain Works, Trenton, N. J.

**CHAIRS (Opera and Theatre.)**  
Andrews Co., A. H., Chicago, Ill.

**— and Stools (Steel.)**  
Angie Steel Stool Co., Plainwell, Mich.

**CHEMICAL MACHINERY.**  
Swenson Evaporator Co., Harvey, Ill.

**CHEMICALS.**  
Grasselli Chemical Co., Inc., Birmingham, Ala.

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Barrow-Age Laboratories, Memphis, Tenn.  
Flood & Co., Walter H., Chicago, Ill.  
Froehling & Robertson, Inc., Richmond, Va.  
Hunt Co., Robert W., Chicago, Ill.  
Moses, Bassett & Slaughter, Phila., Pa.  
Picard Laboratories, The, Birmingham, Ala.  
Pittsburgh Testing Laboratories, Pittsburgh, Pa.  
Southwestern Laboratories, Fort Worth, Tex.  
Stillman & Van Siclen, New York.  
Wiley & Co., Inc., Baltimore, Md.

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Froehling & Robertson, Inc., Richmond, Va.

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Rust Engineering Co., Birmingham, Ala.

**— (Radial Brick.)**  
Rust Engineering Co., Birmingham, Ala.

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Electric Storage Battery Co., Phila., Pa.

**CHLORINATORS.**  
Rees, S. P., Atlanta.

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I. T. E. Circuit Breaker Co., Phila., Pa.  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

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Drapier, E. S., Charlotte, N. C.  
Ludlow Engineers, Winston-Salem, N. C.

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Kaiser Clock Co., L. E., Baltimore, Md.

**— (Watchman's Portable.)**  
Davis-Paradis Watchman's Clock Corp., New York, N. Y.

Kaiser Clock Co., L. E., Baltimore, Md.

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Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

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Hayward Co., The, New York, N. Y.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago.

Stephens-Adamson Mfg. Co., Birmingham, Ala.

Webster & Weller Mfg. Companies, Chicago, Ill.

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Allen-Sherman-Hoff Co., Phila., Pa.

**— Tipples.**

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Virginia Bridge & Iron Co., Roanoke, Va.

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Merco Nordstrom Valve Co., San Francisco, Calif.

**COKE.**

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Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

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Cement Gun Construction Co., Chicago.

Rust Engineering Co., Birmingham, Ala.

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**— Information Only.**

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Chain Belt Co., Milwaukee, Wis.

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Jagger Machine Co., Columbus, Ohio.

Lansing Co., Lansing, Mich.

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**— Placing Equipment.**

National Equipment Corp. (Inslay Division), Milwaukee, Wis.

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McEverlast, Inc., Los Angeles, Cal.

**— Roofing Tile.**

American Cement Tile Mfg. Co., Pittsburgh, Pa.

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Ingersoll-Rand Co., New York, N. Y.

Manitowoc Iron Works Co., Manitowoc, Mich.

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Union Steam Pump Co., Battle Creek, Mich.

Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

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**— (Drainage and Dredging.)**

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Atlantic Gulf and Pacific Co., New York.

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Walker Electrical Co., Atlanta, Ga.

Warner Service Co., Knoxville, Tenn.

Webb Electric Co., Anderson, S. C.

**— Foundations and Dams.)**

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Snare Corp., Frederick, New York, N. Y.

**— (General.)**

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Blair, Algernon, Montgomery, Ala.

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Cornell-Young Co., Inc., Macon, Ga.

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**Fluke-Carter Constr. Co., Greenville, S. C.**  
**Gridley Constr. Co., Lee A., Knoxville, Tenn.**

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**Snare Corp., Frederick, New York, N. Y.**

**Stone & Webster, Inc., Boston, Mass.**

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**White Engineering Corp., J. G., New York.**

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Hair, Algernon, Montgomery, Ala.

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Snare Corp., Frederick, New York, N. Y.

Stone & Webster, Inc., Boston, Mass.

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Tucker & Laxon, Charlotte, N. C.

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**— (Plastering.)**

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Jennings & Co., Floyd, Atlanta, Ga.

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Poe Piping & Heating Co., Greenville, S. C.

**— (Power Plants.)**

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**— (Railroad.)**

Calligan & Co., A. H., Richmond, Va.

Cornell-Young Co., Inc., Macon, Ga.

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Unitite Cone & Constr. Co., Kansas City.

Tucker & Laxon, Charlotte, N. C.

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Gridley Constr. Co., Lee A., Knoxville, Tenn.

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Hardway Contracting Co., Columbus, Ga.

Hornbuckle Contracting Co., Atlanta, Ga.

McCrary Co., The J. B., Atlanta, Ga.

Snare Corp., Frederick, New York, N. Y.

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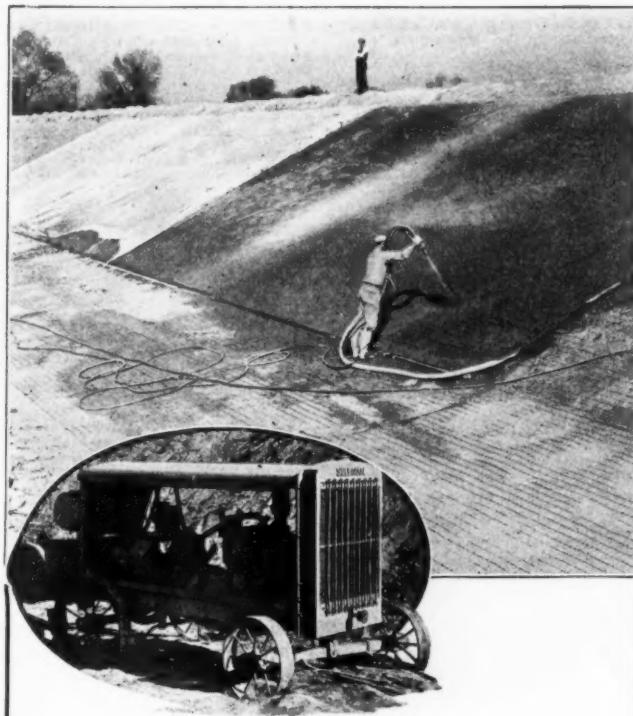


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Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.  
The Shovel Co., The, Lorain, Ohio.

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Industrial Brownhoist Corp., Cleveland, O.  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.  
The Shovel Co., The, Lorain, Ohio.

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Cast Iron Pipe Research Assn., Chicago,  
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Dixie Culvert Mfg. Co., Little Rock, Ark.  
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General Electric Co., Schenectady, N. Y.

Gregory Electric Co., Chicago.

Nashville Industrial Corp., Old Hickory, Tenn.

Nestorum & Co., V. M., Ft. Wayne, Ind.

O'Brien Machinery Co., The, Phila., Pa.

Randie Machinery Co., The, Cincinnati, O.

Rockford Power Machy. Co., Rockford, Ill.

Stewart Elec. Co., John A., Cincinnati.

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Miller Co., St. Louis, Mo.

—**(Hand and Belt Power.)**  
American Elevator & Machine Co., Inc., Louisville, Ky.

Miller Co., St. Louis, Mo.

—**(Hydraulic.)**  
American Elevator & Machine Co., Inc., Louisville, Ky.

—**(Portable.)**

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MacElwes & Crandall, Inc., Cambridge, Mass.

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Shaw Co., Russell B., St. Louis, Mo.

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 Floyd & Lochridge, Dallas, Texas.  
 Gardner & Howe, Memphis, Tenn.  
 Hardaway Contracting Co., Columbus, Ga.  
 Harra Engineering Co., Chicago.  
 Hurdick Inc., Irv. G., Hot Springs Nat'l. Park, Ark.  
 Lee, William S., Charlotte, N. C.  
 Main, Inc., Chas. T., Boston, Mass.  
 Sirrine & Co., J. E., Greenville, S. C.  
 Tucker & Laxton, Charlotte, N. C.  
 Wheeler, Walter H., Minneapolis, Minn.  
 White Engr. Corp., J. G., New York.

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 Floyd & Lochridge, Dallas, Texas.  
 Ford, Bacon & Davis, Inc., New York.  
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 Hills Co., George B., Jacksonville, Fla.  
 Ludlow Engineers, Winston-Salem, N. C.

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 Barstow & Co., W. H., Reading, Pa.  
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**(Electrical.)**  
 Battay & Kipp, Inc., Chicago, Ill.  
 Engineering Service Corp., Houston, Texas.  
 Hoosier Engineering Co., Chicago, Ill.  
 Lee, William S., Charlotte, N. C.  
 Lockwood Greene Engrs., Inc., New York City.  
 Main, Inc., Chas. T., Boston, Mass.  
 Muller, Arthur L., Kansas City, Mo.  
 Sanderson & Porter, New York, N. Y.  
 Stone & Webster, Inc., Boston, Mass.  
 Tucker & Laxton, Charlotte, N. C.  
 Webb Electric Co., Anderson, S. C.  
 White Co., Gilbert C., Durham, N. C.  
 Wiley & Wilson, Lynchburg, Va.

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 Battay & Kipp, Inc., Chicago, Ill.  
 Biggs Eng. Co., W. E., Knoxville, Tenn.  
 Byllesby Engineering and Management Corp., Chicago, Ill.  
 Ford, Bacon & Davis, Inc., New York.  
 Lee, William S., Charlotte, N. C.  
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 Muller, Arthur L., Kansas City, Mo.  
 Sanderson & Porter, New York, N. Y.  
 Scofield Engineering Co., Phila., Pa.  
 Stone & Webster, Inc., Boston, Mass.  
 Tucker & Laxton, Charlotte, N. C.  
 White Engineering Corp., J. G., New York.  
 White Co., Gilbert C., Durham, N. C.

**(Flood Control.)**  
 Floyd & Lochridge, Dallas, Texas.  
 Harra Engineering Co., Chicago.

**(Forest.)**  
 Lacey & Co., Jas. D., New York, N. Y.

**(Gas.)**  
 Byllesby Engineering and Management Corp., Chicago, Ill.  
 Ford, Bacon & Davis, Inc., New York.  
 Harrison, William Henry, Washington, D. C.  
 Wadleigh & Bailey, Washington, D. C.

**(Geological.)**  
 De Kalb, Courtenay, New York City.  
 Froehling & Robertson, Richmond, Va.  
 Harrison, William Henry, Washington, D. C.  
 Wadleigh & Bailey, Washington, D. C.

**(Harbor Improvements.)**  
 Billingsley, James W., New Orleans, La.  
 Engineering Service Corp., Houston, Texas.  
 Fay, Spofford & Thorndike, Boston, Mass.

**(Heating.)**  
 Battay & Kipp, Inc., Chicago, Ill.  
 Biggs Eng. Co., W. E., Knoxville, Tenn.  
 Wiley & Wilson, Lynchburg, Va.

**(Hydraulic.)**  
 Alpaugh & Sons, Chas. W., Manassas, Va.  
 Floyd & Lochridge, Dallas, Texas.  
 Fuller & McClintock, New York, N. Y.  
 Harra Engineering Co., Chicago.  
 Main, Inc., Chas. T., Boston, Mass.

**(Hydro-electric.)**  
 Alpaugh & Sons, Chas. W., Manassas, Va.  
 Battay & Kipp, Inc., Chicago, Ill.  
 Byllesby Engineering and Management Corp., Chicago, Ill.  
 Harra Engineering Co., Chicago.  
 Main, Inc., Chas. T., Boston, Mass.  
 Lee, William S., Charlotte, N. C.  
 Ludlow Engineers, Winston-Salem, N. C.  
 Main, Inc., Chas. T., Boston, Mass.  
 Mees & Mees, Charlotte, N. C.  
 Piatt, William M., Durham, N. C.  
 Sanderson & Porter, New York, N. Y.  
 Scofield Engineering Co., Phila., Pa.  
 Sirrine & Co., J. E., Greenville, S. C.  
 Tucker & Laxton, Charlotte, N. C.  
 White Engineering Corp., J. G., New York.

**(Ice and Refrigerating.)**  
 Engineering Service Corp., Houston, Texas.

**(Industrial Plants.)**  
 Ballinger Co., Philadelphia, Pa.  
 Barstow & Co., W. H., Reading, Pa.  
 Battay & Kipp, Inc., Chicago, Ill.  
 Biggs Eng. Co., W. E., Knoxville, Tenn.  
 Billingsley, James W., New Orleans, La.  
 Charleston Constructors, Inc., Charleston, S. C.  
 Conover, Older & Quinlan, Inc., Chicago.  
 Gardner & Howe, Memphis, Tenn.  
 Greiner & Co., J. E., Baltimore, Md.  
 Herty, Charles H., New York City.

**(Research and Development.)**  
 Invicta Engineering Co., Birmingham, Ala.

**(Sanitary.)**  
 Harra Engineering Co., Chicago.

**(Sewage Disposal Plants.)**  
 Fuller & McClintock, New York, N. Y.  
 Ludlow Engineers, Winston-Salem, N. C.  
 McCrary Co., The, J. B., Atlanta, Ga.  
 Platt, William M., Durham, N. C.  
 Wiedeman and Singleton, Inc., Atlanta.

**(Sewerage and Waterworks.)**  
 Conrad & Busby, Burlington, N. J.  
 Conover, Older & Quinlan, Inc., Chicago.  
 Ford, Bacon & Davis, Inc., New York.  
 Fuller & McClintock, New York, N. Y.  
 Hardaway Contracting Co., Columbus, Ga.  
 Harrub Eng. Co., C. N., Nashville, Tenn.  
 Hills Co., George B., Jacksonville, Fla.  
 Howerton Engineering Co., Asheville, N. C.  
 Knowles, Inc., Morris, Pittsburgh, Pa.  
 Ludlow Engineers, Winston-Salem, N. C.  
 Mess & Mees, Charlotte, N. C.  
 Platt, William M., Durham, N. C.  
 Sanderson & Porter, New York, N. Y.  
 Spoon & Lewis, Greensboro, N. C.  
 Tucker & Laxton, Charlotte, N. C.  
 White Co., Gilbert C., Durham, N. C.  
 White Engineering Corp., J. G., New York.

**(Structural.)**  
 Freeland, Roberts & Co., Nashville, Tenn.  
 Hendrick, Inc., Irv. G., Hot Springs Nat'l. Park, Ark.  
 Hills Company, Geo. B., Jacksonville, Fla.  
 Lockwood Greene Engrs., Inc., New York City.  
 Simmons, Inc. & Associates, B. Stanley, Washington, D. C.  
 Turner, C. A. P., Minneapolis, Minn.  
 Virginia Bridge & Iron Co., Roanoke, Va.

**(Textile Mills.)**  
 Battay & Kipp, Inc., Chicago, Ill.  
 Byllesby Engineering & Management Corp., Chicago, Ill.  
 Ford, Bacon & Davis, Inc., New York.  
 General Electric Vapor Lamp Co., Hoboken, N. J.  
 Wiley & Wilson, Lynchburg, Va.

**(Transmission Lines.)**  
 Hoosier Engineering Co., Chicago, Ill.

**(Ventilating and Heating.)**  
 Biggs Eng. Co., W. E., Knoxville, Tenn.  
 Wiley & Wilson, Lynchburg, Va.

**(Water Supply.)**  
 Floyd & Lochridge, Dallas, Texas.

**ENGINES (Compressed Air.)**  
 Duke Engine Co., Grand Haven, Mich.

**(Diesel Type.)**  
 Fairbanks, Morse & Co., Chicago, Ill.

**(Gas and Gasoline.)**  
 Light Mfg. & Fdry. Co., Pottstown, Pa.  
 Novo Engine Co., Lansing, Mich.  
 Stirling Engine Co., Buffalo, N. Y.  
 Wisconsin Motors Co., Milwaukee, Wis.

**(Gas and Oil.)**  
 Chicago Pneumatic Tool Co., New York.

**(Hoisting.)**  
 Clyde Iron Works Sales Co., Duluth, Minn.  
 Mundy Hoisting Engine Co., J. H., Newark, N. J.

**(Marine.)**  
 Fairbanks, Morse & Co., Chicago, Ill.

**(Oil.)**  
 Ingersoll-Rand Co., New York, N. Y.  
 Continental Gin Co., Birmingham, Ala.

**(Steam.)**  
 Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
 Cole Mfg. Co., R. D., Newnan, Ga.  
 Lefell & Co., The James, Springfield, O.  
 Lombard Iron Works & Supply Co., Augusta, Ga.  
 Morris Machine Works, Baldwinsville, N. Y.  
 Schofield's Sons Co., J. S., Macon, Ga.

**ENVELOPES.**  
 Young & Seldon Co., Baltimore, Md.

**ESTIMATORS (Building & Construction.)**  
 Spring, Charles Herbert, Greensboro, N. C.

**EXCAVATING MACHINERY.**  
 Bay City Shovels, Inc., Bay City, Mich.  
 Buckeye Traction Ditcher Co., Findlay, O.  
 Bucyrus-Erie Co., Erie, Penn.  
 Clyde Iron Works Sales Co., Duluth, Minn.  
 Harnischfeger Corp., Milwaukee, Wis.  
 Hayward Co., The, New York, N. Y.  
 Industrial Brownhoist Corp., Cleveland.  
 Monighan Mfg. Corp., Chicago, Ill.  
 National Equipment Corp., Koshering, Ind., Milwaukee, Wis.  
 Northwest Engineering Co., Chicago, Ill.  
 Owen Bucket Co., The, Cleveland, Ohio.  
 Thew Shovel Co., The, Lorain, Ohio.  
 Universal Power Shovel Co., Milwaukee, Wis.

**EXCAVATORS (Clamshell and Orange Peel.)**  
 Northwest Engineering Co., Chicago, Ill.  
 Ohio Power Shovel Co., Lima, Ohio.  
 Thew Shovel Co., Lorain, Ohio.

**(Dragline. See Dragline Excavators.)**

**(Trench.)**  
 Barber-Greene Co., Aurora, Ill.  
 Bay City Shovels, Inc., Bay City, Mich.  
 Buckeye Traction Ditcher Co., Findlay, O.  
 Bucyrus-Erie Co., Erie, Penn.  
 Harroway Corp., Milwaukee, Wis.  
 Haynes Co., The, New York, N. Y.  
 Monigan Mfg. Corp., Chicago, Ill.  
 Ohio Power Shovel Co., Lima, Ohio.  
 Universal Power Shovel Co., Milwaukee, Wis.

**EXHAUST FANS (See Blowers and Exhaust Fans.)**

**Systems (See Blowers and Exhaust Fans.)**

**EXPANSION Joints (Road and Street.)**  
 Servicized Pre-moulded Products, Inc., Chicago, Ill.

**FACTORY Management Systems.**  
 Ernst & Ernst, New York, N. Y.

**FANS, Exhaust (See Blowers and Exhaust Fans.)**

**FEED-WATER HEATERS and Purifiers.**  
 American Water Softener Co., Phila., Pa.

**FENCE POSTS (Creosoted.)**  
 Ayer & Lord Tie Co., Chicago, Ill.

**FENCING Entrance Gates (Iron, Steel and Wire.)**  
 American Steel and Wire Co., Balt., Md.  
 Anchor Post Fence Co., Baltimore, Md.  
 Cyclone Fence Co., Waukegan, Ill.  
 Page Fence Association, Chicago, Ill.  
 Stewart Iron Works Co., Cincinnati, O.

**FIELD and Industrial, Wire Woven.**  
 American Steel and Wire Co., Balt., Md.  
 Anchor Post Fence Co., Baltimore, Md.  
 Cyclone Fence Co., Waukegan, Ill.  
 Gulf States Steel Co., Birmingham, Ala.  
 Page Fence Association, Chicago, Ill.  
 Stewart Iron Works Co., Cincinnati, O.

**FERTILIZER MACHINERY.**  
 Raymond Bros., Impact Pulv. Co., Chicago.

**FILTER (For Domestic and Industrial Purposes.)**  
 American Water Softener Co., Phila., Pa.  
 International Filter Co., Chicago, Ill.  
 Rees, S. P., Atlanta.  
 Roberta Filter Mfg. Co., Darby (Phil.), Pa.  
 Scaife & Sons Co., Wm. B., Oakmont, Pa.

**FINANCING.**  
 Akers, William, Atlanta, Ga.  
 Electric Bond & Share Co., New York.  
 Garraway & Co., S. G., Chicago.  
 Gay & Co., W. O., New York, N. Y.  
 Marx & Co., Birmingham, Ala.

**FIRE CLAY.**  
 Alabama Clay Products Co., Birmingham.  
 Cambria Clay Products Co., Blackford, O.

**FIRE EXTINGUISHERS.**  
 Myers & Bro. Co., The F. E., Ashland, O.

**FIREPROOF Building Material.**  
 Bannon Pipe Co., Louisville, Ky.  
 Robertson Co., H. H., Pittsburgh.

**Doors and Shutters.**  
 Kinney Mfg. Co., The, Columbus, Ohio.  
 Mahon Co., R. C., Detroit, Mich.  
 Moeschl-Edwards Corp., Cincinnati, O.  
 Richards-Wilcox Mfg. Co., Aurora, Ill.

**FITTINGS (Wire Rope.)**  
 Lechner & Sons Rope Co., A., St. Louis.

**FLANGES (Iron and Steel.)**  
 Amer. Cast Iron Pipe Co., Birmingham.  
 Dart Mfg. Co., E. M., Providence, R. I.

National Cast Iron Pipe Co., Birmingham, Ala.  
Taylor Forge & Pipe Wks., Chicago, Ill.  
U. S. Pipe & Foundry Co., Burlington, N. J.  
Vogt Mch Co., Henry, Louisville, Ky.

—**and Flanged Fittings.**  
Grinnell Co., Inc., Providence, R. I.

**FLOOR.** (Asphalt Plank)  
Servicized Premaulded Products, Inc., Chicago, Ill.

—**(Composition.)**  
Johns-Manville Corp., New York, N. Y.

—**(Cork Composition.)**  
Congoleum-Nairn Inc., Kearny, N. J.

—**(Hardwood, Maple, Oak.)**  
Kirby Lumber Co., Houston, Tex.  
Nashville Hardwood Flooring Co., Nashville, Tenn.

—**(Linoleum.)**  
Congoleum-Nairn Inc., Kearny, N. J.

—**(Northern Hard Maple.)**  
Holt Hardwood Co., Oconto, Wis.

—**(Open Steel.)**  
Blaw-Knox Co., Pittsburgh, Pa.  
Irving Iron Works Co., Long Is. City, N. Y.  
Kerlow Steel Flooring Co., Jersey City, N. J.

—**Covering.**  
Congoleum-Nairn Inc., Kearny, N. J.

—**Hardener (Concrete.)**  
Sonnenborn Sons, Inc., L. New York.  
Stonhard Co., Phila., Pa.

—**Plates and Stair Treads.**  
American Pressed Steel Co., Phila., Pa.  
Central Iron & Steel Co., Harrisburg, Pa.

Ryerson & Son, Inc., Joe. T., St. Louis and New York.

—**Steel (For Concrete Culverts, Roads, Streets.)**  
Blaw-Knox Co., Pittsburgh, Pa.

—**Wax.**  
Congoleum-Nairn Inc., Kearny, N. J.

—**(Wood) Preservative.**  
Stonhard Co., Phila., Pa.

**FLUSH-TANK SIPHONS.**  
Pacific Flush-Tank Co., New York, N. Y.

**FLYER PRESSERS.**  
Southern Spindle & Flyer Co., Charlotte, N. C.

**FLYERS.**  
Southern Spindle & Flyer Co., Charlotte, N. C.

**FORGINGS (Drop.)**  
Vogt Mch Co., Henry, Louisville, Ky.

**FORMS, Steel (For Concrete, Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)**  
Blaw-Knox Co., Pittsburgh, Pa.

**FOUNDATION MASONRY.**  
Calligan Co., A. H., Richmond, Va.

**FOUNDRIES and Machine Shops.**  
Deemer Steel Casting Co., New Castle, Del.  
General Machine Works, York, Pa.  
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.  
Golden's Fdry. & Mch. Co., Columbus, Ga.  
Lombard Iron Works & Supply Co., Augusta, Ga.  
Moerastin Bushing Co., Chattanooga, Tenn.  
Mountain States Steel Foundries Parkersburg, W. Va.

**FOUNDRY Equipment and Supplies.**  
Chain Belt Co., Milwaukee, Wis.  
Hill & Grifith Co., The, Cincinnati, O.  
—**Facings (Tale and Soapstone.)**  
Hill & Grifith Co., The, Cincinnati, O.

**FUMIGATORS (Fruit, Nuts, Nursery Stock, etc.)**  
Union Tank & Pipe Co., Los Angeles, Cal.

**FURNACES (Industrial.)**  
Combustion Engr. Corp., New York City.  
—**(Water-Cooled.)**  
Combustion Engr. Corp., New York City.  
Fuller Lehigh Co., Fullerton, Pa.

**GALVANIZED Products.**  
Birmingham Galvanizing Co., Birmingham, Ala.  
Cattie & Bros., Joe. P., Philadelphia, Pa.  
—**Steel and Iron.**  
American Rolling Mill Co., Middletown, O.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Granite City Steel Co., Granite City, Ill.  
Republic Steel Corp., Youngstown, Ohio.

**GALVANIZING (Cadmium Plating.)**  
Birmingham Galvanizing Co., Birmingham, Ala.

—**(Hot Dip.)**  
Bessemer Galvanizing Works, Birmingham, Birmingham Galvanizing Co., Birmingham, Ala.  
Cattie & Bros., Joe. P., Philadelphia, Pa.  
Newport News Shipbuilding & Drydock Co., Newport News, Va.

**GARAGES (Metal.)**  
Maryland Metal Building Co., Balt., Md.

**GAS HOLDERS.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Atlanta, Ga.

—**Producers.**  
Gas-O-Flame Stove Works, Port Deposit, Md.  
Morgan Construction Co., Worcester, Mass.  
Wood & Co., R. D., Philadelphia, Pa.

**GASOLINE and KEROSENE.**  
Gulf Refining Co., Pittsburgh, Pa.

**GASOLINE SHOVELS (See Shovels.)**

**GATES (Automatic Drainage.)**  
Armen Culvert Mfrs. Assn., Middletown, O.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Dixie Culvert Mfg. Co., Little Rock, Ark.  
Louisiana Corr. Culvert Co., Baton Rouge, La.  
Tenn. Metal Culvert Co., Nashville, Tenn.  
Western Metal Mfg. Co., Houston, Texas.

**GAUGE GLASSES.**  
Jenkins Bros., New York, N. Y.

**GEARS.**  
DeLaval Steam Turbine Co., Trenton, N. J.  
Earle Gear & Machine Co., Phila., Pa.  
General Electric Co., Schenectady, N. Y.

—**(Worm Reduction.)**  
DeLaval Steam Turbine Co., Trenton, N. J.

**GENERATORS, MOTORS (New.)**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
General Electric Co., Schenectady, N. Y.  
Howell Electric Motors Co., Howell, Mich.  
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.  
Wisconsin Motor Co., Milwaukee, Wis.

—**(Used.)**  
Belyea Co., Inc., New York City.  
Electrical Equip. Co., Raleigh, N. C.  
Gregory Electric Co., Chicago.  
Nashville Ind. Corp., Old Hickory, Tenn.  
Nussbaum & Co., V. M., Ft. Wayne, Ind.  
O'Brien Machinery Co., Phila., Pa.  
Randall Machinery Co., The, Cincinnati, O.  
Stewart Elec. Co., John A., Cincinnati.

**GEOLOGISTS. (See Engineers, Geological.)**

**GLASS (Art.)**  
Binswanger & Co., Memphis, Tenn.  
Hires Turner Glass Co., Philadelphia, Pa.

—**(Plate.)**  
Binswanger & Co., Inc., Memphis, Tenn.  
Blue Ridge Glass Corp., Kingsport, Tenn.  
Hires Turner Glass Co., Philadelphia, Pa.

—**(Window.)**  
Blue Ridge Glass Corp., Kingsport, Tenn.  
Hires Turner Glass Co., Philadelphia, Pa.

—**(Wire.)**  
Blue Ridge Glass Corp., Kingsport, Tenn.  
Hires Turner Glass Co., Phila., Pa.

**GRADERS (Elevating.)**  
Adams Co., J. D., Indianapolis, Ind.  
Caterpillar Tractor Co., San Leandro, Calif.

—**(Leaning Wheel Road.)**  
Adams Co., J. D., Indianapolis, Ind.

—**(One Man Motor.)**  
Adams Co., J. D., Indianapolis, Ind.  
Riddell Co., W. A., Busyrus, Ohio.

**GRAPHITE.**  
Dixon Crucible Co., Joe., Jersey City, N. J.

**GRATES and Grate Bars.**  
Schofield's Sons Co., J. S., Macon, Ga.  
Vogt Machine Co., Henry, Louisville, Ky.

**GRATING (Area, Flooring, Sidewalk.)**  
Bates Steel Corp., Walter, Gray, Ind.  
Blaw-Knox Co., Pittsburgh, Pa.

Hendrick Mfg. Co., Carbondale, Pa.  
Irving Iron Works, Long Is. City, N. Y.  
Kerlow Steel Flooring Co., Jersey City, N. J.

**GRAVEL (Roofing and Road.)**  
American Limestone Co., Knoxville, Tenn.  
Arundel Corp., The, Baltimore, Md.  
Borley & Co., W. W., Roanoke, Va.  
Friend & Co., Inc., Petersburg, Va.

**GREASE Cups.**  
Lunkenheimer Co., The, Cincinnati, O.

**GRILLES (Brass, Bronze, Steel, etc.)**  
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

**GRINDERS (Cylinder.)**  
Hutte Engineering Co., Detroit, Mich.

—**(Electric.)**  
Chicago Pneumatic Tool Co., New York.

—**(Gypsum, Limestone, etc.)**  
Raymond Bros. Impact Pulv. Co., Chicago.

**GRINDING MACHINERY (Flexible Shaft.)**  
Hutte Engineering Co., Detroit, Mich.  
Strand & Co., N. A., Chicago, Ill.

**Wheels.**  
Carborundum Co., Niagara Falls, N. Y.

**GUARD RAIL (Road.)**  
National Traffic Guard Co., Atlanta.

**GUNITE CONSTRUCTION.**  
Cement-Gun Co., Inc., Allentown, Pa.  
Cement Gun Construction Co., Chicago.  
Gunite Cone & Constr. Co., Kansas City.  
Gunite Constr. Co., New York City.  
Rust Engineering Co., Birmingham, Ala.

**GUNPOWDER.**  
Du Pont de Nemours & Co., Inc., E. L., Wilmington, Del.  
Hercules Powder Co., Inc., Wilmington, Del.

**GUNS (Hydraulic.)**  
Georgia Iron Works, Augusta, Ga.

**HANGARS (Airplane.)**  
Blaw-Knox Co., Pittsburgh, Pa.  
Braden Steel Corp., Tulsa, Okla.  
Ingalls Iron Works, Birmingham, Ala.  
Maryland Metal Bldg. Co., Balt., Md.

**HANGERS (Door, All Kinds.)**  
Richards-Wilcox Mfg. Co., Aurora, Ill.

—**(Line Shaft.)**  
American Pulley Co., Philadelphia, Pa.  
Wood's Sons Co., T. B., Chambersburg, Pa.

**HARBOR IMPROVEMENTS.**  
Arundel Corp., Baltimore, Md.  
Atlantic, Gulf & Pacific Co., New York.

**HARDWARE (Door.)**  
Richards-Wilcox Mfg. Co., Aurora, Ill.

**HEATERS (Asphalt.)**  
Honhorst Co., Joe., Cincinnati, O.

**HEATING APPARATUS (Engineers and Contractors.)**  
Grinnell Co., Inc., Providence, R. I.  
Poe Piping & Heating Co., Greenville, S. C.  
Skinner Bros. Mfg. Co., St. Louis, Mo.

—**Systems.**  
Clara Fan Co., Kalamazoo, Mich.  
Skinner Bros. Mfg. Co., St. Louis, Mo.

**HOISTING MACHINERY.**  
Clyde Iron Works Sales Co., Duluth, Minn.  
Lidgerwood Mfg. Co., Elizabeth, N. J.

**HOISTS (Air Portable.)**  
Ingersoll-Rand Co., New York, N. Y.  
Sullivan Machinery Co., Chicago, Ill.

—**(Chain.)**  
Harrington Co., The, Philadelphia, Pa.

—**(Electric.)**  
Clyde Iron Works Sales Co., Duluth, Minn.  
Harnischfeger Corp., Milwaukee, Wis.  
Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.  
Mundy Hoisting Engine Co., J. S., Newark, N. J.  
Nove Engine Co., Lansing, Mich.  
O. K. Clutch & Machy. Co., Columbia, Pa.  
Street Bros. Mch. Wks., Chattanooga, Tenn.

**IRON.**  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—**(Ingot, For Culverts, etc.)**  
American Rolling Mill Co., Middletown, O.

**JOINTS (Pipe.)**  
Leadite Co., The, Philadelphia, Pa.

—**(Gasoline.)**  
Clyde Iron Works Sales Co., Duluth, Minn.  
Dake Engine Co., Grand Haven, Mich.  
Mundy Hoisting Engine Co., J. S., Newark, N. J.  
National Equipment Corp. (C. H. & H. Division), Milwaukee, Wis.  
Nove Engine Co., Lansing, Mich.  
O. K. Clutch & Machy. Co., Columbia, Pa.  
Street Bros. Mch. Wks., Chattanooga, Tenn.

—**(Hand Power.)**  
O. K. Clutch & Machy. Co., Columbia, Pa.

—**(Steam.)**  
Clyde Iron Works Sales Co., Duluth, Minn.  
Dake Engine Co., Grand Haven, Mich.  
Mundy Hoisting Engine Co., J. S., Newark, N. J.  
Street Bros. Mch. Wks., Chattanooga, Tenn.

**HOOPS, Bands, etc. (Galvanized.)**  
Connors Steel Co., Birmingham, Ala.

**HOPPERS (Aggregate, Measuring and Weighing.)**  
Blaw-Knox Co., Pittsburgh, Pa.

**HOSE (Rubber.)**  
Republie Rubber Co., Youngstown, Ohio.

**HOTELS.**  
Heise Hotel Systems, St. Louis, Mo.  
Southern Hotel, The, Baltimore, Md.

**HOUSE MOVING.**  
Eichley, Jr. Co., John, Pittsburgh.

**HULLS (Steel.)**  
American Steel Dredge Co., Fort Wayne, Ind.

**HUMIDIFYING AND DRYING EQUIPMENT.**  
Grinnell Co., Inc., Providence, R. I.  
Skinner Bros. Mfg. Co., St. Louis, Mo.

**HYDRANTS (Fire.)**  
Ludlow Valve Mfg. Co., The, Troy, N. Y.  
Myers & Bro. Co., The, F. E., Ashland, O.  
Vogt Brothers Mfg. Co., Louisville, Ky.  
Wood & Co., R. D., Philadelphia, Pa.

**HYDRO - ELECTRIC POWER COMPANIES (Offering Industrial and Commercial Opportunities.)**  
Alabama Power Co., Birmingham, Ala.  
Central Power & Light Co., San Antonio, Texas.  
Georgia Power Co., Atlanta, Ga.  
Texas Power & Light Co., Dallas, Texas.

**ICE and Refrigerating Machinery and Supplies.**  
Ingersoll-Rand Co., New York, N. Y.  
Vogt Mch. Co., Henry, Louisville, Ky.

**INCINERATORS.**  
Duplex Hanger Co., Cleveland, Ohio.  
Swenson Evaporator Co., Harvey, Ill.

**INCORPORATORS.**  
Corporation Service Co., Wilmington, Del.  
Delaware Registration Trust Co., Wilmington, Del.

**INJECTORS.**  
Jenkins Bros., New York, N. Y.  
Randle Machinery Co., The, Cincinnati, O.

**INSULATING MATERIALS.**  
General Electric Co., Schenectady, N. Y.  
Okonite Co., New York, N. Y.

**INVESTMENT SECURITIES.**  
Electric Bond & Share Co., New York.  
Gay & Co., W. O., New York City.  
Hanchett Bond Co., Inc., The, Chicago, Ill.  
Marx & Co., Birmingham, Ala.  
Mercantile Trust Co., Baltimore, Md.  
Nuveen & Co., John, Chicago.  
Peabody & Co., Chicago.  
Provident Savings Bank & Trust Co., Cincinnati, Ohio.  
Seasonswood & Mayer, Cincinnati, Ohio.  
Taylor, Wilson & Co., Inc., Cincinnati, O.

**JOIST HANGERS.**  
Duplex Hanger Co., Cleveland, Ohio.

**KETTLES (Pavers and Roofs).**  
Hamerst Co., Jas., Cincinnati, O.

**LADDERS (Rolling).**  
Mars & Bro. Co., The F. R., Ashland, O.

**(Wooden.)**  
Dayton Safety Ladder Co., Cincinnati, O.  
Patent Scaffolding Co., Chicago, Ill.

**LAMPS (Incandescent.)**  
General Electric Vapor Lamp Co., Hoboken, N. J.  
Western Electric Co., New York City.

**LATH (Metal.)**  
Ingalls Iron Works Co., Birmingham, Ala.

**LATHES.**  
Sebastian Lathes Co., Cincinnati, Ohio.

**LIGHTING (Factory and Mill.)**  
General Electric Vapor Lamp Co., Hoboken, N. J.

**Fixtures (Electric.)**  
Benson Brass & Chandelier Works, Kansas City, Mo.  
Western Electric Co., New York City.

**LIME RECOVERY SYSTEMS.**  
Swenson Evaporator Co., Harvey, Ill.

**LININGS (Flue, Fire Clay.)**  
Lee Clay Products Co., Clearfield, Ky.  
Owensboro Sewer Pipe Co., Owensboro, Ky.

**(Tube Mill.)**  
Fuller Lehigh Co., Fullerton, Pa.

**LINOLEUM (Battleship, Embossed Inlaid, Inlaid, Jasper.)**  
Congoleum-Nairn Inc., Kearny, N. J.

**LITHOGRAPHERS and ENGRAVERS.**  
Smith & Son Co., Oscar T., Baltimore, Md.  
Young & Selden Co., Baltimore, Md.

**LOADING and UNLOADING MACHINERY (Portable.)**  
Barber-Green Co., Aurora, Ill.  
Northwest Engineering Co., Chicago, Ill.

**LOCOMOTIVES (Compressed Air.)**  
Porter Co., H. K., Pittsburgh, Pa.  
**(Fireless Stored Steam.)**  
Porter Co., H. K., Pittsburgh, Pa.  
**(Gasoline.)**  
Porter Co., H. K., Pittsburgh, Pa.  
Whitcomb Co., Geo. D., Rochelle, Ill.  
**(Industrial.)**

Birmingham Rail & Locomotive Co., Birmingham, Ala.  
Porter Co., H. K., Pittsburgh, Pa.  
Southern Iron & Equipment Co., Atlanta.  
Whitcomb Co., Geo. D., Rochelle, Ill.  
**(Mining.)**

Porter Co., H. K., Pittsburgh, Pa.  
Whitcomb Co., Geo. D., Rochelle, Ill.  
**(Railway.)**  
Porter Co., H. K., Pittsburgh, Pa.  
Southern Iron & Equipment Co., Atlanta.  
Whitcomb Co., Geo. D., Rochelle, Ill.

**LOGGING MACHINERY.**  
Clyde Iron Works Sales Co., Duluth, Minn.

**LOOM PICK COUNTER**  
Vester-Roet, Inc., Hartford, Conn.

**LUBRICANTS.**  
Dixon Crucible Co., Jas., Jersey City, N. J.  
Gulf Refining Co., Pittsburgh, Pa.

**LUBRICATORS, (Force Feed.)**  
Lunkenheimer Co., The, Cincinnati, O.

**LUBRICATION SYSTEMS.**  
Alemite Corp., Chicago, Ill.

**LUMBER (Ceiling, Flooring, Siding.)**

Industrial Lumber Co., Elizabeth, La.  
Kirby Lumber Co., Houston, Texas.

**(Creosoted.)**

Amer. Creosote Wks., Inc., New Orleans, La.

Amer. Creosoting Co., Inc., Louisville, Ky.

Ayer & Lord Tie Co., Inc., Chicago.

Carolina Wood Preserving Co., Charleston, S. C.

Dalware Wood Preserving Co., Phila.

Eppinger & Russell Co., New York, N. Y.

Gulf States Creos. Co., Hattiesburg, Miss.

Savannah Creos. Co., Savannah, Ga.

**(Heavy Construction, Pitch, Pine, etc.)**

Brooks-Scanlon Corp., Foley, Florida.  
Industrial Lumber Co., Elizabeth, La.

Kirby Lumber Co., Houston, Texas.

**Yellow Pine.**

Brooks-Scanlon Corp., Foley, Florida.

**(Zinc Meta Arsenite Treated.)**

Curtin-Hows Corp., New York City.

**MACHINERY (Special.)**

Bliss Co., E. W., Brooklyn, N. Y.

Earle Gear & Machine Co., Phila., Pa.

Fernholz Machinery Co., St. Louis, Mo.

General Machine Works, York, Pa.

**and Supplies (New and Used.)**

Belyea Co., Inc., New York City.

Electric Service Co., Cincinnati, Ohio.

Equip. Sales & Rentals Co., Pittsburgh.

Heineken Engineering Corp., New York.

Marine Metal & Supply Co., New York.

Nashville Ind. Corp., Old Hickory, Tenn.

O'Brien Machinery Co., The, Phila., Pa.

Randall Machinery Co., The, Cincinnati, O.

Ryerson & Son, Inc., Jas. T., St. Louis

and New York.

Seyfert's Sons, Inc., L. F., Phila., Pa.

Zelnicker Supply Co., W. A., St. Louis.

**MACHINE TENDERS (Steel.)**

Angle Steel Stedi Co., Plainwell, Mich.

**(Tools.)**

Jenkins Bros., New York, N. Y.

Republic Rubber Co., Youngstown, Ohio.

**(Used.)**

Delta Equipment Co., Philadelphia, Pa.

O'Brien Machinery Co., Phila., Pa.

**MAIL CHUTES.**

Cutter Mail Chute Co., Rochester, N. Y.

**MARBLE (Producers and Manufacturers.)**

Georgia Marble Co., Tate, Ga.

**MATERIAL ELEVATORS.**

National Equipment Corp., Insley, C. H. & E., Milwaukee, Wis.

**METAL-CUTTING MACHINERY.**

Atkins & Co., E. C., Indianapolis, Ind.

Marie Gear & Machine Co., Phila., Pa.

**Working Machinery.**

Bliss Co., E. W., Brooklyn, N. Y.

**MILL MACHINERY and SUPPLIES.**

Lombard Iron Works & Supply Co., Au-

usta, Ga.

**MINING MACHINERY.**

McLanahan-Stone Machine Co., Hollidays-

burg, Pa.

**MIXERS.**

National Equipment Corp., (Keshring,

T. L. Smith, Kwik-Mix), Milwaukee,

Wis.

**(Asphalt.)**

Erie Machine Shops, Erie, Pa.

**(Hot.)**

Koehring Co., Milwaukee, Wis.

**(Mortar.)**

Chain Belt Co., Milwaukee, Wis.

Jagger Machine Co., Columbus, Ohio.

**(Plaster.)**

Blystone Mfg. Co., Cambridge Springs, Pa.

Chain Belt Co., Milwaukee, Wis.

Dunning & Bouchart Press Co., Syracuse,

N. Y.

Jagger Machine Co., Columbus, Ohio.

**MOTORS (Electric.)**

Fairbanks, Morse & Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Hornell Electric Motors Co., Howell, Mich.

Western Electric Co., New York City.

Westinghouse Elec. & Mfg. Co., E. Pitts-

burgh, Pa.

**(Gasoline.)**

Wisconsin Motor Co., Milwaukee, Wis.

**MOTOR TRUCKS.**

International Harvester Co. of America,

Inc., Chicago, Ill.

**NAILS (Cut.)**

Reading Iron Co., Reading, Pa.

**and Spikes.**

American Steel & Wire Co., Balto., Md.

Gulf States Steel Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co.,

Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngs-

town, Ohio.

**PENSTOCKS.**

Chattanooga Boiler & Tank Co., Chat-

tanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta.

Pittsburgh-Del. Moline Steel Co., Pitts-

burgh, Pa.

Smith Co., S. Morgan, York, Pa.

**PETROLEUM REFINERS.**

Gulf Refining Co., Pittsburgh, Pa.

**PHOSPHATE ACID.**

Davison Chemical Co., Baltimore, Md.

**(Machinery.)**

McLanahan-Stone Machine Co., Hollidays-

burg, Pa.

**PIG-IRON.**

Republic Steel Corp., Youngstown, Ohio.

Sloss-Sheffield Steel & Iron Co., Birming-

ham, Ala.

**PLANERS and Mortisers (Hand and Electric.)**

Wappat, Incorporated, Pittsburgh, Pa.

**NATURAL GAS COMPANIES.**  
(Offering Industrial and Commercial Opportunities.)

Arkansas Natural Gas Corp., Shreveport, La.

**OIL (Fuel and Gas.)**

Gulf Refining Co., Pittsburgh, Pa.

**Cups.**

Lunkenheimer Co., The, Cincinnati, O.

**ORE-WASHING MACHINERY.**

Georgia Iron Works, Augusta, Ga.

McLanahan Stone Machine Co., Hollidays-

burg, Pa.

**ORNAMENTAL BRONZE WORK.**

Heath Co., J. S., Waukegan, Ill.

Michaels Art Bronze Co., Covington, Ky.

**IRON WORK.**

Roanoke Iron & Bridge Wks., Roanoke, Va.

Sned Architectural Iron Works, Louis-

ville, Ky.

Southern Engineering Co., Charlotte, N. C.

Stewart Iron Works Co., Cincinnati, O.

**PACKING (Asbestos, Metallic, Rubber, Leather, etc.)**

Jenkins Bros., New York, N. Y.

Republ. Rubber Co., Youngstown, Ohio.

**Protection (Freight Shipments.)**

Kimberly Clark Corp., Chicago, Ill.

**PAINT (Aluminum.)**

Aluminum Co. of America, Pittsburgh, Pa.

**(Metal Surfaces.)**

Aluminum Co. of America, Pittsburgh, Pa.

Dixon Crucible Co., Jas., Jersey City, N. J.

**(Mill White, For Interior.)**

Aluminum Co. of America, Pittsburgh, Pa.

Sonneborn Sons, Inc., L. New York.

**(Preservative.)**

Cabot, Inc., Samuel, Boston, Mass.

Foster Co., Benjamin, Philadelphia, Pa.

**PANELBOARDS.**

Adam Elec. Co., Frank, St. Louis.

**PARTITIONS (Metal, Folding, Rolling.)**

Kinney Mfg. Co., The, Columbus, Ohio.

Lupton's Sons Co., David, Phila., Pa.

**(Sectionfold, Rolling, Wood.)**

Wilson Corp., The, J. G. New York.

**PATENT ATTORNEYS.**

Buck, Sterling P., Washington, D. C.

Coleman, Watson E., Washington, D. C.

Eaton, Paul B., Charlotte, N. C.

Sammot, Edward C., Washington, D. C.

Seymour & Bright, Washington, D. C.

**PATTERNS (Drawing, etc.)**

Haas Pattern Co., A. W., Atlanta, Ga.

**PAVING Blocks (Creosoted Wood.)**

American Creosets Works, New Orleans.

**Blocks (Rubber.)**

Servicized Premoulded Products, Inc., Chi-

cago, Ill.

**(Brick.)**

National Paving Brick Mfrs. Assn., Wash-

ington, D. C.

**Mixers.**

National Equipment Corp., (Koehring, T.

L. Smith), Milwaukee, Wis.

**Plant (Asphalt.)**

Simplicity System Co., Chattanooga, Tenn.

**PENSTOCKS.**

Chattanooga Boiler & Tank Co., Chat-

tanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta.

Pittsburgh-Del. Moline Steel Co., Pitts-

burgh, Pa.

**Perforated Metal.**

Chicago Perforating Co., Chicago, Ill.

Erie Perforating Co., Rochester, N. Y.

Harrington & King Perf. Co., Chicago.

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Myers & Son, Inc., Jas. T., St. Louis and New York.  
Tennessee Coal, Iron & Railroad Co., Birmingham.

**PNEUMATIC TOOLS.**

Chicago Pneumatic Tool Co., New York.  
Ingersoll-Rand Co., New York, N. Y.

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Amer. Creosote Wks., Inc., New Orleans.  
Amer. Creosoting Co., Inc., Louisville, Ky.  
Ayer & Lord Tin Co., Inc., Chicago.  
Brown Wood Preserving Co., Louisville, Ky.  
Caroline Wood Preserving Co., Charleston, S. C.  
Savannah Creosoting Co., Savannah, Ga.  
Taylor-Culpepper Co., Spartanburg, S. C.  
—(Steel.)  
Bates Steel Corp., Walter, Gray, Ind.  
—(Tubular, Steel.)  
National Tube Co., Pittsburgh, Pa.  
—(Zinc Meta Arsenite Treated.)  
Curtin-Hove Corp., New York City.

**POLISHING MACHINERY.**

(Wheels, Blocks.)  
Carborundum Co., Niagara Falls, N. Y.

**PORTABLE HOUSES (Metal.)**

Braden Steel Corp., Tulsa, Okla.  
Maryland Metal Building Co., Baltimore, Md.

**POST CAPS.**

Duplex Hanger Co., Cleveland, Ohio.

**POSTS (Cast Iron, Railway and Highway.)**

U. S. Pipe & Foundry Co., Burlington, N. J.

**POWER TRANSMISSION MACHINERY.**

American Pulley Co., Philadelphia, Pa.  
Diamond Chain & Mfg. Co., Indianapolis.  
Golden's Fdry. & Mfg. Co., Columbus, Ga.  
Morse Chain Co., Ithaca, N. Y.  
O'Brien Machinery Co., Phila., Pa.  
Schofield's Sons Co., J. E., Macon, Ga.  
Wood's Sons Co., T. B., Chambersburg, Pa.

**(Pumps.)**

Luitwiler Pumping Engine Co., Rochester, N. Y.

**PREHEATERS (Air.)**

Combustion Engr. Corp., New York City.

**PRESSES, (Baling, Cottonseed Oil, Hydraulic and Power.)**

Dunning & Borchert Press Co., Inc., Syracuse, N. Y.  
Ripley Foundry & Machine Co., Ripley, O.  
—(Hydraulic Wheel.)  
Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.  
—(Metal Stamping.)  
Bliss Co., E. W., Brooklyn, N. Y.

**PRINTERS (Book, Catalog, Job.)**

Smith & Son Co., Oscar T., Baltimore, Md.

Young & Selden Co., Baltimore, Md.

**PRODUCER (Gas Machines.)**

Gas-O-Fame Stove Works, Port Deposit, Md.  
Morgan Construction Co., Worcester, Mass.

Wood & Co., R. D., Phila., Pa.

**PULLER-JACKS.**

Edelblute Co., T. H., Pittsburgh, Pa.

**PULLEYS (Friction Clutch.)**

Caldwell Co., Inc., W. E., Louisville, Ky.  
Schultz & Son, A. L., Chicago, Ill.  
Wood's Sons Co., T. B., Chambersburg, Pa.

**—(Motor and Machine.)**

American Pulley Co., Philadelphia, Pa.

**—(Steel Split.)**

American Pulley Co., Phila., Pa.

**—Shafting and Hangers.**

American Pulley Co., Phila., Pa.

Goldens' Fdry. & Mfg. Co., Columbus, Ga.

Wood's Sons Co., T. B., Chambersburg, Pa.

**PULVERIZED COAL EQUIPMENT.**

Fuller Lehigh Co., Fullerton, Pa.  
Combustion Engr. Corp., New York, N. Y.

**PULVERIZERS (See Crushing and Pulverizing Machinery.)****PUMPING MACHINERY.**

American Well Works, Aurora, Ill.  
Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.

Chain Belt Co., Milwaukee, Wis.  
Cook, Inc., A. D., Lawrenceburg, Ind.  
Fairbanks, Morse & Co., Chicago, Ill.  
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.  
Keystone Pump & Drill Co., Beaver Falls, Pa.

Luitwiler Pumping Engine Co., Rochester, N. Y.  
Myers & Bro. Co., The F. E., Ashland, Ohio.

National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.  
Platt Iron Works, Dayton, Ohio.  
Union Steam Pump Co., Battle Creek, Mich.

Viking Pump Co., Cedar Falls, Iowa.  
Virginia Mch. & Well Co., Richmond, Va.

**PUMPS (Air.)**

Manistein Iron Works Co., Manistee, Mich.

**—(Air Lift.)**

Ingersoll-Rand Co., New York, N. Y.  
Sullivan Machinery Co., Chicago, Ill.

**—(Boiler Feed.)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.  
DeLaval Steam Turbine Co., Trenton, N. J.  
Eric Pump & Engine Wks., Medina, N. Y.  
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.

Manistein Iron Works Co., Manistee, Mich.

Myers & Bro. Co., The F. E., Ashland, Ohio.

**—(Centrifugal.)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
American Well Works, Aurora, Ill.

Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.  
DeLaval Steam Turbine Co., Trenton, N. J.  
Emerson Pump & Valve Co., Alexandria, Va.

Eric Pump & Engine Wks., Medina, N. Y.  
Fairbanks, Morse & Co., Chicago, Ill.  
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.

Jagger Machine Co., Columbus, Ohio.  
Layne & Bowler, Inc., Memphis, Tenn.

Manistein Iron Works Co., Manistee, Mich.

Morris Machine Wks., Baldwinville, N. Y.  
Novo Engine Co., Lansing, Mich.

Union Steam Pump Co., Battle Creek, Mich.

**—(Contractors.)**

Emerson Pump & Valve Co., Alexandria, Va.

Eric Pump & Engine Wks., Medina, N. Y.  
Novo Engine Co., Lansing, Mich.

**—(Deep Well.)**

American Well Works, Aurora, Ill.

Cook, A. D., Lawrenceburg, Ind.

Keystone Pump & Drill Co., Beaver Falls, Pa.

Layne & Bowler, Inc., Memphis, Tenn.

Luitwiler Pumping Engine Co., Rochester, N. Y.

Novo Engine Co., Lansing, Mich.

**—(Diaphragm.)**

Novo Engine Co., Lansing, Mich.

**—(Hydraulic.)**

Dunning & Borchert Press Co., Inc., Syracuse, N. Y.

**—(Power.)**

American Well Works, Aurora, Ill.

Platt Iron Works, Dayton, Ohio.

Sterling Engine Co., Buffalo, N. Y.

**—(Pulverized Coal.)**

Fuller Lehigh Co., Fullerton, Pa.

**—(Rotary.)**

Viking Pump Co., Cedar Falls, Iowa.

**—(Sand and Dredging.)**

Hillcoat Machine Corp., Baltimore, Md.

Eric Pump & Engine Wks., Medina, N. Y.

Georgia Iron Works, Augusta, Ga.

**—(Steam.)**

Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.

Connor Pump & Valve Co., Alexandria, Va.

Fairbanks, Morse & Co., Chicago, Ill.

Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.

Platt Iron Works, Dayton, Ohio.

Union Steam Pump Co., Battle Creek, Mich.

**—(Vacuum.)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Chicago Pneumatic Tool Co., New York.

Ingersoll-Rand Co., New York, N. Y.

Sullivan Machinery Co., Chicago, Ill.

**—(Water Works.)**

American Well Works, Aurora, Ill.

Layne & Bowler, Inc., Memphis, Tenn.

Manistein Iron Works Co., Manistee, Mich.

**PUNCHING and SHEARING MACHINERY.**

Bliss Co., E. W., Brooklyn, N. Y.

Whitney Metal Tool Co., Rockford, Ill.

**RACK RAKES.**

Newport News Shipbuilding & Drydock Co., Newport News, Va.

**RADIATOR ENCLOSURES.**

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

**RAILINGS (Iron Pipe.)**

Pipe Railings Constr. Co., Long Island City, N. Y.

**ROAD and Street Machinery.**

Acme Road Mchry. Co., Frankfort, N. Y.

Adams Co., J. D., Indianapolis, Ind.

Austin-Western Road Mchry. Co., Chicago.

Blaw-Knox Co., Pittsburgh, Pa.

Buffalo-Springfield Roller Co., Springfield, O.

Caterpillar Tractor Co., San Leandro, Cal.

**—and Grilles, Iron and Brass, (Banks and Offices.)**

Ludlow Saylor Wire Co., The St. Louis, Mo.

**RAILROAD Equipment and Supplies (New.)**

Robinson & Orr, Pittsburgh, Pa.

**—Equipment and Supplies (Used.)**

Birmingham Rail & Locomotive Co., Birmingham.

Equip. Sales & Rentals Co., Pittsburgh.

Levis & Co., Henry, Philadelphia, Pa.

Penn Machinery Co., H. O., New York.

Smith & Co., W. M., Birmingham, Ala.

Southern Iron & Equip. Co., Atlanta, Ga.

Zelnicker Supply Co., W. A., St. Louis.

**—Frogs and Switches.)**

Bethlehem Steel Co., Bethlehem, Pa.

Frank, M. K., Pittsburgh, Pa.

Koppel Ind. Car & Equip. Co., Koppel.

Robinson & Orr, Pittsburgh, Pa.

**RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)**

Atlanta and West Point R. R., Atlanta.

Central of Georgia Rwy., Savannah, Ga.

Kansas City - Texas Lines, Dallas, Texas.

Missouri Pacific Lines, St. Louis, Mo.

Missouri Land Company, Flagler System, St. Augustine, Fla.

Norfolk & Western Railway, Roanoke, Va.

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—(Textile.) American Kunz Scale Co., New York City.

**SCHOOLS** (Correspondence.) International Correspondence Schools, Scranton, Pa.

**SCOOFS** (Hand.) American Mfg. Co., Chattanooga, Tenn.

—Wheeled. Riddell Co., W. A., Bucyrus, Ohio.

**SCRAPERS** (Drag and Wheel.) Adams Co., J. D., Indianapolis, Ind.

Austin-Western Road Mfrg. Co., Chicago.

Sauermaier Bros., Chicago, Ill.

**SCRAP IRON AND STEEL.** Hunts Sons, M. J., Philadelphia, Pa.

Perry, Buxton, Deans Co., Philadelphia.

Smith & Co., W. M., Birmingham, Ala.

**SCREENING** (For Concrete and Road Construction.) American Limestone Co., Kaeville, Tenn.

**SCREENS** (Sand, Gravel, Stone, Coal, Ore, etc.) Chicago Perforating Co., Chicago, Ill.

Erie Perforating Co., Rochester, N. Y.

Hendrick Mfg. Co., Carbondale, Pa.

Ludlow Saylor Wire Co., The St. Louis, Mo.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Mundt & Sons, Charles, Jersey City, N. J.

Stephens-Adams Mfg. Co., Birmingham, Ala.

Universal Crusher Co., Cedar Rapids, Iowa.

**SCREW-Machine Products.** Progressive Mfg. Co., Tarrington, Conn.

**SCREWS** (Machine.) Progressive Mfg. Co., Tarrington, Conn.

**SEAWALLS.** Shore-Line Builders, Inc., Jacksonville, Fla.

**SEPARATORS** (Dust.) Raymond Bros., Impact Pav. Co., Chicago.

**SEWAGE Disposal Apparatus.** Pacific Flush-Tank Co., New York, N. Y.

**SEWER Joint Compounds.** Pacific Flush-Tank Co., New York, N. Y.

Serviceable Premixed Products, Inc., Chicago, Ill.

—Pipe (Vitrified.) Bannon Pipe Co., Louisville, Ky.

Cambridge Clay Products Co., Blackford, O.

Dix Co., Wm. E., Oak Hill, Ohio.

Lee Clay Products Co., Clearfield, Ky.

Owensboro Sewer Pipe Co., Owensboro, Ky.

**SEWER PIPE MACHINERY** (Concrete.) Quinn Wire & Iron Works, Boone, Iowa.

**SHADES** (Offset.) Hough Shade Corp., Chicago, Ill.

**SHAFTING.** Ryerson & Sons, Inc., Jas. T., St. Louis and New York.

—(Cold Rolled.) Elles & Laughlin, Inc., Harvey, Ill.

—(Flexible.) Strand & Co., N. A., Chicago, Ill.

—Material (Tubular.) National Tube Co., Pittsburgh, Pa.

**SHARPENING Stones.** Carborundum Co., Niagara Falls, N. Y.

**SHEET Metal Work.** National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.

Skinner Bros. Mfg. Co., St. Louis, Mo.

—Metal Working Machinery. Ellis Co., E. W., Brooklyn, N. Y.

Whitney Metal Tool Co., Rockford, Ill.

Yoder Co., The, Cleveland, Ohio.

—Steel and Iron. American Rolling Mill Co., Middletown, O.

American Sheet and Tin Plate Co., Pittsburgh, Pa.

Bethlehem Steel Co., Bethlehem, Pa.

Granite City Steel Co., Granite City, Ill.

Republic Steel Corp., Youngstown, Ohio.

Ryerson & Son, Inc., Jas. T., St. Louis and New York.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngstown, O.

**SHEETS** (Asbestos.) Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.

Eternit, Inc., St. Louis, Mo.

—(Steel—Asbestos Covered.) Robertson Co., H. H., Pittsburgh, Pa.

**SHELVING** (Unit.) Lupton's Sons Co., David, Phila., Pa.

**SHINGLES** (Asbestos.) Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.

Eternit, Inc., St. Louis, Mo.

—(Stain.) Cabot, Inc., Samuel, Boston, Mass.

**SHOVELS** (Hand.) American Mfg. Co., Chattanooga, Tenn.

—(Steam, Gas and Electric Power.) Bucyrus-Erie Co., Erie, Penna.

Harnischfeger Corp., Milwaukee, Wis.

Industrial Brewster's Corp., Cleveland, O.

National Equipment Corp. (Koehring, Inslay), Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

New Shovel Co., The, Lorain, Ohio.

Universal Power Shovel Co., Milwaukee, Wis.

**SHUTTERS** (Steel.) Merchant & Evans Co., Philadelphia, Pa.

—(Steel and Wood Bifolding.) Kinnear Mfg. Co., The, Columbus, Ohio.

**SILICATE OF SODA.** Grasselli Chemical Co., Inc., Birmingham, Ala.

**SITES** (Manufacturing.) Alabama Power Co., Birmingham, Ala.

Arkansas Natural Gas Corp., Shreveport, La.

Atlanta and West Point R. R., Atlanta, Brown & Co., Chattanooga, Tenn.

Central of Georgia Rwy., Savannah, Ga.

Central Power & Light Co., San Antonio, Galveston City of, Galveston, Texas.

Georgia Power Co., Atlanta, Ga.

Jacksonville, City of Jacksonville, Florida.

Missouri-Kansas-Texas Line, Dallas, Texas.

Model Land Company, (Flagler System), St. Augustine, Fla.

Norfolk & Western Railway, Roanoke, Va.

Tennessee Central Railway, Nashville, Tenn.

Texas Power & Light Co., Dallas, Texas.

**SKYLIGHTS.** Milcor Steel Co., Milwaukee, Wis.

Robertson Co., H. H., Pittsburgh, Pa.

**SLABS** (Concrete Floor.) American Cement Tile Mfg. Co., Pittsburgh, Pa.

—(Concrete Roof.) American Cement Tile Mfg. Co., Pittsburgh, Pa.

**SLAG**, For Concrete. Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.

Woodstock Slag Corp., Birmingham, Ala.

—(Furnace.) Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.

Woodstock Slag Corp., Birmingham, Ala.

**SLINGS** (Chain.) Woodhouse Chain Works, Trenton, N. J.

—(Wire Rope.) Rosling's Sons Co., John A., Trenton, N. J.

**SLUICE GATES AND APPLIANCES.** Smith Co., S. Morgan, York, Pa.

**SMELTERS.** Swenson Evaporator Co., Harvey, Ill.

**SNATCH BLOCKS** (For Wire and Manila Rope.) Patterson Co., W. W., Pittsburgh.

**SPADES.** American Mfg. Co., Chattanooga, Tenn.

**SPEED REDUCERS.** Harle Gear & Mach. Co., Phila., Pa.

Morse Chain Co., Ithaca, N. Y.

Stephens-Adams Mfg. Co., Birmingham, Ala.

**SPIKES**, (Railroad, Ship.) Bethlehem Steel Co., Bethlehem, Pa.

Republic Steel Corp., Youngstown, Ohio.

Sweet's Steel Co., Williamsport, Pa.

**SPINNINGS** (Metal for Aircraft.) Benson Brass & Chandelier Works, Kansas City, Mo.

**SPRINGS** (Machinery, Railway, Spiral Steel.) American Steel & Wire Co., Balto., Md.

Raymond Mfg. Co., Corry, Pa.

—(Wire—All Kinds.) American Steel & Wire Co., Balto., Md.

SPRINKLERS (Automatic Fire.) Grinnell Co., Inc., Providence, R. I.

**SPROCKETS.** Diamond Chain & Mfg. Co., Indianapolis.

Morse Chain Co., Ithaca, N. Y.

**STACKS** (Iron and Steel.) Biggs Boiler Works Co., Akron, Ohio.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.

Combustion Eng'r. Corp., New York City.

Hammond Iron Works, Warren, Pa.

Hedges' Walsh Welding Co., Chattanooga, Tenn.

Ingalls Iron Works Co., Birmingham, Ala.

MacKenzie Iron Works, Charlotte, N. C.

Phoenix Iron Co., The, Phila., Pa.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

—Tank Heads. Commercial Shearing & Stamping Co., Youngstown, Ohio.

**STOKERS** (Mechanical.) Babcock & Wilcox Co., The, New York.

Combustion Eng'r. Corp., New York City.

**STORAGE Batteries.** Electric Storage Battery Co., Philadelphia.

—Bins (Steel.) Blaw-Knox Co., Pittsburgh, Pa.

**STRIPS** (Steel.) American Steel & Wire Co., Baltimore.

**STRUCTURAL STEEL** (Hot Galvanized.) Bessemer Galvanizing Works, Birmingham, and Iron.

American Bridge Co., New York, N. Y.

Belmont Iron Works, Philadelphia, Pa.

Bristol Steel & Iron Works, Inc., Bristol, Va.

Carnegie Steel Co., Pittsburgh, Pa.

Carolina Steel & Iron Co., Greensboro, N. C.

Champion Bridge Co., Wilmington, Ohio.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Converse Bridge & Steel Co., Chattanooga, Tenn.

Dietrich Brothers, Baltimore, Md.

Eichley, Jr. Co., John, Pittsburgh.

Erie Steel Constr. Co., Erie, Pa.

Ingalls Iron Works Co., Birmingham, Ala.

McClintic-Marshall Co., Pittsburgh, Pa.

Nashville Bridge Co., Nashville, Tenn.

Phoenix Iron Co., The, Phila., Pa.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Republic Steel Corp., Youngstown, Ohio.

Richmond Struc. Steel Co., Richmond, Va.

Roanoke Iron & Bridge Works, Inc., Roanoke, Va.

Ryerson & Son, Inc., Jas. T., St. Louis and New York.

Smeal Architectural Iron Works, Louisville, Ky.

Tenneco Engineering Co., Charlotte, N. C.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Virginia Bridge & Iron Co., Roanoke, Va.

**SULPHATE OF ALUMINA.** Grasselli Chemical Co., Inc., Birmingham, Ala.

**SULPHATE PULP MILLS.** Swenson Evaporator Co., Harvey, Ill.

**SULPHIDE OF SODA.** Grasselli Chemical Co., Inc., Birmingham, Ala.

**SULPHURIC ACID.** Davison Chemical Co., The, Balto., Md.

Du Pont de Nemours & Co., Inc., N. J., Wilmington, Del.

**SUPER-HEATERS** (Steam.) Babcock & Wilcox Co., The, New York.

**SURVEYS** (Industrial.) Dame-Wolfe Co., Washington, D. C.

MacElwee & Crandall, Inc., Cambridge, Mass.

Technical Service Co., New York, N. Y.

—Quantity. Rowan, W. E., Charlotte, N. C.

Spring, Charles Herbert, Greensboro, N. C.

Williams, O. F., Charlotte, N. C.

**SURVEYING INSTRUMENTS.** Weber Co., Inc., F., Philadelphia, Pa.

**SWINGING ENGINES.** Dake Engine Co., Grand Haven, Mich.

**SWITCHBOARDS, SWITCHES, ETC.** Adam Elec. Co., Frank, St. Louis.

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**SYSTEMS** (Business.) Ernst & Ernst, New York, N. Y.

**TACKLE BLOCKS** (For Wire and Manila Rope.) Patterson Co., W. W., Pittsburgh.

**TANKS (Air Compressor.)**  
Air-Tight Steel Tank Co., Pittsburgh, Pa.

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Titusville Iron Works Co., Titusville, Pa.

—(Elevated Steel.)  
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Cole Mfg. Co., R. D., Newnan, Ga.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Schofield's Sons Co., J. S., Mason, Ga.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Elevated Wood.)  
Caldwell Co., Inc., W. E., Louisville, Ky.

Davis & Son, G. M., Palatka, Fla.

Woolford Wood Tank Mfg. Co., G. Paschall P. O., Philadelphia.

—(Iron and Steel.)  
Air-Tight Steel Tank Co., Pittsburgh, Pa.

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Biggs Boiler Works Co., Akron, Ohio.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

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Lombard Iron Works & Supply Co., Augusta, Ga.

McClintic-Marshall Co., Pittsburgh, Pa.

Mecklenburg Iron Works, Charlotte, N. C.

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Virginia Bridge & Iron Co., Roanoke, Va.

Westinghouse Traction Brake Co., Wilmersdorf, Pa.

—(Seamless Steel.)  
Janney, Jr., Jas. A., Phila., Pa.

National Tube Co., Pittsburgh, Pa.

—(Storage, Oil, etc.)  
Biggs Boiler Works, Akron, Ohio.

Birmingham Boiler & Engr. Co., Birmingham, Ala.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.

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Hammond Iron Works, Warren, Pa.

Ingraham Iron Works Co., Birmingham, Ala.

Mecklenburg Iron Works, Charlotte, N. C.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Titusville Iron Works Co., Titusville, Pa.

—(Wood.)  
Caldwell Co., Inc., W. E., Louisville, Ky.

Davis & Son, G. M., Palatka, Fla.

Virginia Mch'y. & Well Co., Richmond, Va.

Woolford Wood Tank Mfg. Co., G. Paschall P. O., Philadelphia.

—(Wood Pickling.)  
Woolford Wood Tank Mfg. Co., G. Paschall P. O., Philadelphia.

**TAPE (Insulating.)**  
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—(Measuring.)  
Lufkin Rule Co., Saginaw, Mich.

**TAX SPECIALISTS.**  
Ernst & Ernst, New York, N. Y.

Harrison, Wm. Henry, Washington, D. C.

Le Baron, Ernest T., Jacksonville, Fla.

**TELEPHONE SERVICE.**  
American Telephone & Telegraph Co.

**TERRA COTTA (Ornamental.)**  
Atlanta Terra Cotta Co., Atlanta, Ga.

**TEXTILE CHEMICALS.**  
Grasselli Chemical Co., Birmingham, Ala.

**TILE (Cement Roofing.)**  
American Cement Tile Mfg. Co., Pittsburgh, Pa.

—(Cork Composition.)  
Congoleum-Nairn Inc., Kearny, N. J.

—(Cork Flooring.)  
Congoleum-Nairn Inc., Kearny, N. J.

—(Floor.)  
Hoed Co., B. Mifflin, Daisy, Tenn.

—(Hollow Building.)  
Cambridge Clay Products Co., Blackford, Ohio.

—(Roof.)  
Hoed Co., B. Mifflin, Daisy, Tenn.

—(Sewer.)  
Lee Clay Products Co., Clearfield, Ky.

**TIMBER Fittings.**  
Duplex Hanger Co., Cleveland, Ohio.

—(Greased.)  
Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville, Ky.

Carolina Wood Preserving Co., Charleston, S. C.

**TIME Recorders.**  
Kaiser Klock Co., L. E., Baltimore, Md.

**TIN AND TERNE PLATES.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Bethlehem Steel Co., Bethlehem, Pa.

Granite City Steel Co., Granite City, Ill.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

**TOBACCO MACHINERY.**  
Ripley Foundry & Machine Co., Ripley, O.

**TOILET TISSUE.**  
Victoria Paper Mills Co., Fulton, N. Y.

**TOOLS (Measuring.)**  
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Wappat, Incorporated, Pittsburgh, Pa.

**TORCHES (Blow.)**  
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**TOWERS (Electric Transmission.)**  
American Bridge Co., New York, N. Y.

Bates Steel Corp., Walter, Gray, Ind.

Bessemer Galvanizing Works, Birmingham, Nashville Bridge Co., Nashville, Tenn.

—(Radio.)  
Bessemer Galv. Wks., Birmingham, Ala.

—(Steel and Wood.)  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Cole Mfg. Co., R. D., Newnan, Ga.

**TRACK (Portable or Permanent.)**  
Sweet's Steel Co., Williamsport, Pa.

**TRACTORS (Industrial.)**  
Atlas Car & Mfg. Co., The, Cleveland, O.

Caterpillar Tractor Co., San Leandro, Cal.

Clark Tractor Co., Battle Creek, Mich.

Cleveland Tractor Co., Cleveland, Ohio.

International Harvester Co., of America, Inc., Chicago, Ill.

—(Road.)  
Caterpillar Tractor Co., San Leandro, Cal.

Cleveland Tractor Co., Cleveland, Ohio.

—Attachments (Side Boom.)  
W-K-M Co., Inc., Houston, Texas.

**TRAILERS (Four Wheel.)**  
Electric Wheel Co., Quincy, Ill.

—(Heavy Duty.)  
Electric Wheel Co., Quincy, Ill.

—(Industrial.)  
Easton Car & Construction Co., Easton, Pa.

Electric Wheel Co., Quincy, Ill.

—(Pole.)  
Electric Wheel Co., Quincy, Ill.

**TRAMWAYS (Aerial Wire Rope.)**  
American Steel & Wire Co., Balt., Md.

Broderick & Bascom Rope Co., St. Louis.

Leschen & Sons Rope Co., A., St. Louis.

**TRANSFORMERS.**  
General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—(Used.)  
Electric Service Co., Cincinnati, Ohio.

**TRANSMISSION TOWERS (Galvanized.)**  
Bates Steel Corp., Walter, Gray, Ind.

Bessemer Galvanizing Works, Birmingham, Ala.

McClintic-Marshall Co., Pittsburgh, Pa.

**TRENCH MACHINERY. See Excavators (Trench.)**

**TRESTLES (Wooden.)**  
Patent Scaffolding Co., Chicago, Ill.

**TRI-SODIUM PHOSPHATE.**  
Grasselli Chemical Co., Inc., Birmingham, Ala.

**TROLLEY WHEELS (Self Oiling.)**  
Moecasin Bushing Co., Chattanooga, Tenn.

**TRUCK CRANES.**  
Universal Crane Co., Lorain, O.

**TRUCKS (Dry Kiln.)**  
Moore Dry Kiln Co., Jacksonville, Fla.

—(Industrial.)  
Atlas Car & Mfg. Co., The, Cleveland, O.

Lansing Co., Lansing, Mich.

Nutting Truck Co., Chicago, Ill.

—(Motor.)  
International Harvester Co., of America, Inc., Chicago, Ill.

—(Platform, Freight, Mill, Factory, etc.)  
American Pulley Co., Philadelphia, Pa.

**CLARK TRACTOR CO., Battle Creek, Mich.**

Electric Wheel Co., Quincy, Ill.

Nutting Truck Co., Chicago, Ill.

Truscon Steel Co., (Pressed Steel Division) Cleveland, Ohio.

—(Steel Shop.)  
Angie Steel Stool Co., Plainwell, Mich.

**TUBES (Boiler.)** See Boiler Tubes.

**TUBING (Metal.)**  
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—(Seamless Steel.)  
National Tube Co., Pittsburgh, Pa.

Timken Rolling Bearing Co., Canton, O.

**TURBINES (Hydraulic.)**  
Cook, Inc., A. D., Lawrenceburg, Ind.

Davis Foundry & Mach. Works, Rome, Ga.

Leffel & Co., The James, Springfield, O.

Smith Co., S. Morgan, York, Pa.

—(Steam.)  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

DeLaval Steam Turbine Co., Trenton, N. J.

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**TURNBUCKLES.**  
Russell, Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y.

**TURNTABLES.**  
American Bridge Co., New York, N. Y.

Easton Car & Construction Co., Easton, Pa.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Portable for Motor Trucks.)  
Blaw-Knox Co., Pittsburgh, Pa.

**UNIONS.**  
Dart Mfg. Co., E. M., Providence, R. I.

**UNIT HEATERS.**  
Grinnell Co., Inc., Providence, R. I.

Skinner Bros. Mfg. Co., St. Louis, Mo.

**VALVES.**  
Jenkins Bros., New York, N. Y.

Ludlow Valve Mfg. Co., The, Troy, N. Y.

Lunkenheimer Co., The, Cincinnati, Ohio.

Marco Nordstrom Valve Co., San Francisco, Cal.

Mueller Co., Decatur, Ill.

Vogt Brothers Mfg. Co., Louisville, Ky.

Vogt Machine Co., Henry, Louisville, Ky.

Westinghouse Traction Brake Co., Wilmersdorf, Pa.

—(Acid Proof.)  
Lunkenheimer Co., The, Cincinnati, O.

—(Gate.)  
Ludlow Valve Mfg. Co., The, Troy, N. Y.

Lunkenheimer Co., The, Cincinnati, Ohio.

Wood & Co., R. D., Philadelphia, Pa.

**VENTILATING SYSTEMS.**  
Skinner Bros. Mfg. Co., St. Louis, Mo.

Swartwout Co., Cleveland, Ohio.

**WALL HANGERS.**  
Duplex Hanger Co., Cleveland, Ohio.

**WARDROBES (Hygienic, School.)**  
Wilson Corp., The J. G., New York.

**WATCHMAN'S PORTABLE CLOCKS.**  
Davis-Paradis Watchman's Clock Corp., New York, N. Y.

Kaiser Klock Co., L. E., Balt., Md.

**WATERPROOFING (For Brick, Concrete, Granite.)**  
Asphalt Products Co., Syracuse, N. Y.

Foster Co., Benjamin, Philadelphia, Pa.

Serviceco, Preserved Products, Inc., Chicago, Ill.

Senneborn, Sons, Inc., L., New York.

**WATER PURIFICATION.**  
Roberts Filter Mfg. Co., Darby (Phila.), Pa.

Seale & Sons, Wm. B., Oakmont, Pa.

—Softening Apparatus (Purifying.)  
American Water Softener Co., Phila., Pa.

International Filter Co., Chicago, Ill.

—Works Supplies and Appliances.  
Amer. Cast Iron Pipe Co., Birmingham.

Amer. Cast Iron Pipe Research Assn., Chicago.

Cook, Inc., A. D., Lawrenceburg, Ind.

Glamorgan Pipe & Fdry. Co., Lynchburg, Va.

Leadits Co., The, Philadelphia, Pa.

Mueller Co., Decatur, Ill.

U. S. Pipe & Foundry Co., Burlington, N. J.

Wood & Co., R. D., Philadelphia, Pa.

**WELDING APPARATUS (Electric Arc.)**  
General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**WELL CONTRACTORS (Oil, Artesian, etc.)**  
Virginia Mch'y. & Well Co., Richmond, Va.

**WHEELBARROWS.**  
Lansing Co., Lansing, Mich.

Sterling Wheelbarrow Co., Milwaukee.

**WHEELS AND AXLES.**  
Carnegie Steel Co., Pittsburgh, Pa.

**WINCHES.**  
Sagam Derrick Co., Chicago, Ill.

Schultz & Son, A. L., Chicago, Ill.

**WINDOW Frames and Sash (Metal.)**  
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Lupton's Sons Co., David, Phila., Pa.

Truscon Steel Co., Youngstown, O.

**WINDOWS (Bronze Casement.)**  
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—(Steel Basement, Casement.)  
Bayley Co., The William, Springfield, O.

Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

Miller Steel Co., Milwaukee, Wis.

—(Steel Garage.)  
Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

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Bayley Co., William, Springfield, O.

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Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

**WIRE (All Kinds.)**  
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Ryerson & Son, Inc., Jas. T., St. Louis and New York.

—(Barbed Wire, etc.)  
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Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Fence.)  
Anchor Post Fence Co., Baltimore, Md.

Cyclone Fence Co., Waukegan, Ill.

Gulf States Steel Co., Birmingham, Ala.

Gulf Fence Association, Chicago, Ill.

—(Flat and Round.)  
American Steel & Wire Co., Balt., Md.

—(Galvanized and Annealed.)  
American Steel & Wire Co., Balt., Md.

Gulf States Steel Co., Birmingham, Ala.

—(Telephone and Telegraph.)  
American Steel & Wire Co., Balt., Md.

—(Welding.)  
American Steel & Wire Co., Chicago, Ill.

Roebeling's Sons Co., John A., Trenton, N. J.

—Cloth (Iron, Steel, Copper, Brass, etc.)  
Harrington & King Perf. Co., Chicago.

Ludlow Saylor Wire Co., The, St. Louis, Mo.

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Ludlow Saylor Wire Co., The, St. Louis, Mo.

—Rope (Transmission, Hoisting, Haulage.)  
American Steel & Wire Co., Chicago, Ill.

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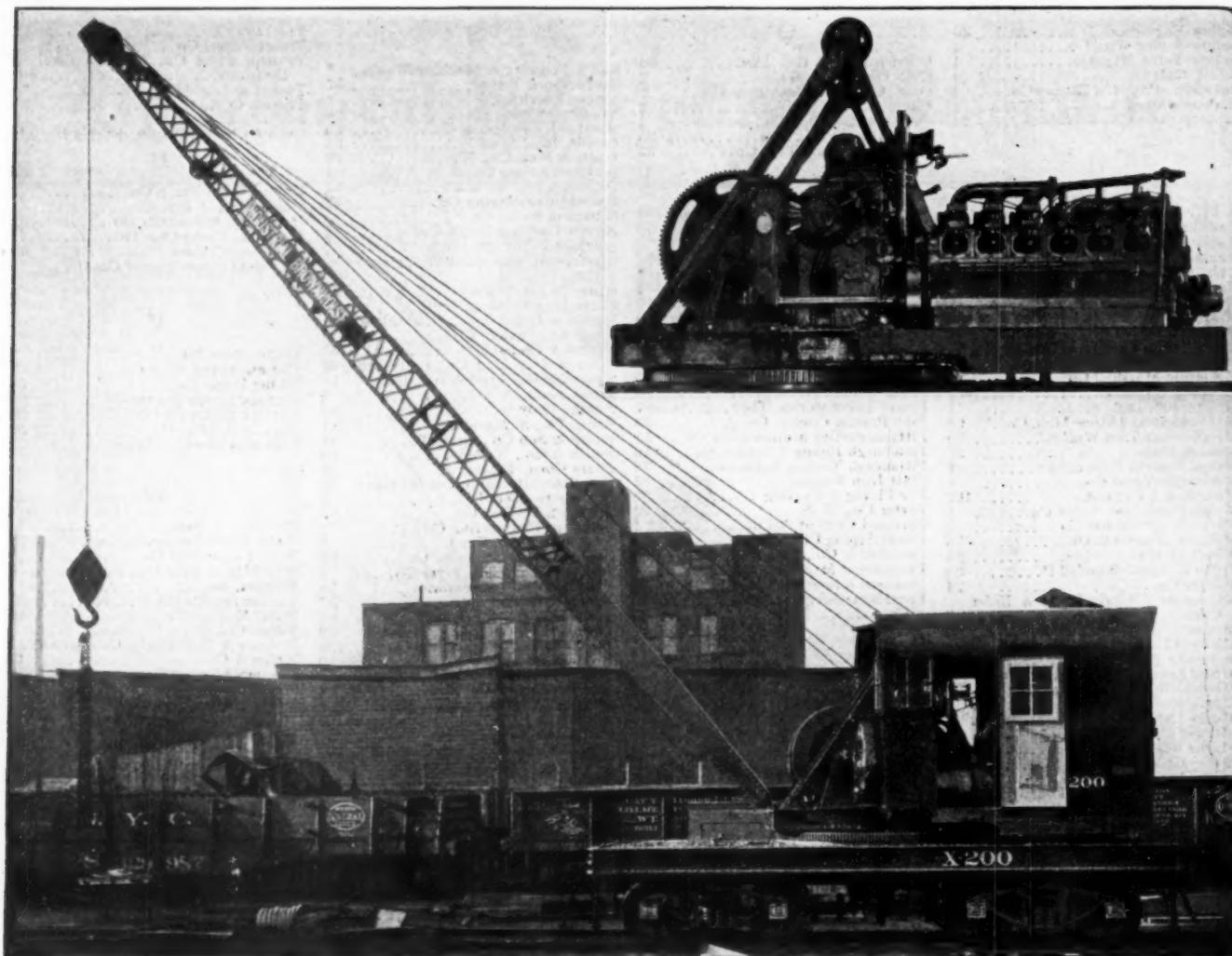
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## A DAILY LIST OF SOUTHERN BUSINESS OPPORTUNITIES

The DAILY CONSTRUCTION BULLETIN issued each business day by Manufacturers Record gives advance, reliable news covering whatever is being planned or started throughout the sixteen Southern states from Maryland to Texas in the way of industrial development, new construction work, building operations, engineering projects, public improvement work of all kinds, the organization of new firms for every purpose and other important phases of Southern development.

Every firm interested in the great Southern market, will find this service of practical business value in keeping in close touch with sales opportunities.

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Answering the growing demand for a popular sized Diesel powered locomotive crane, Industrial Brownhoist is now building the twenty-five ton capacity machine shown above. Designed for Diesel operation, this crane is powered by a six cylinder, two cycle, solid injection type engine.

Simplicity of design and a powerful, quiet-running mechanism have been worked out in this crane to an unusual degree. All of the operating machinery is mounted on a massive cast steel rotating bed and the side frames are also made of cast steel. The

power take-off from the engine is fully enclosed and runs in oil on roller bearings. The crane gears are slow running and a two-speed travel mechanism is provided.

Combining the dependable operation expected of an Industrial Brownhoist with the well recognized economy and flexibility of Diesel power, this crane marks a distinct contribution to the art of better materials handling. We will be glad to give you complete information regarding the work this crane will do, equipped for bucket, hook or magnet operations.

Industrial Brownhoist Corporation, General Offices, Cleveland, Ohio

District Offices: New York, Philadelphia, Pittsburgh, Detroit, Chicago, New Orleans, San Francisco, Cleveland.

Plants: Brownhoist Division, Cleveland; Industrial Division, Bay City, Michigan; Elyria Foundry Division, Elyria, Ohio.

# INDUSTRIAL BROWNHOIST

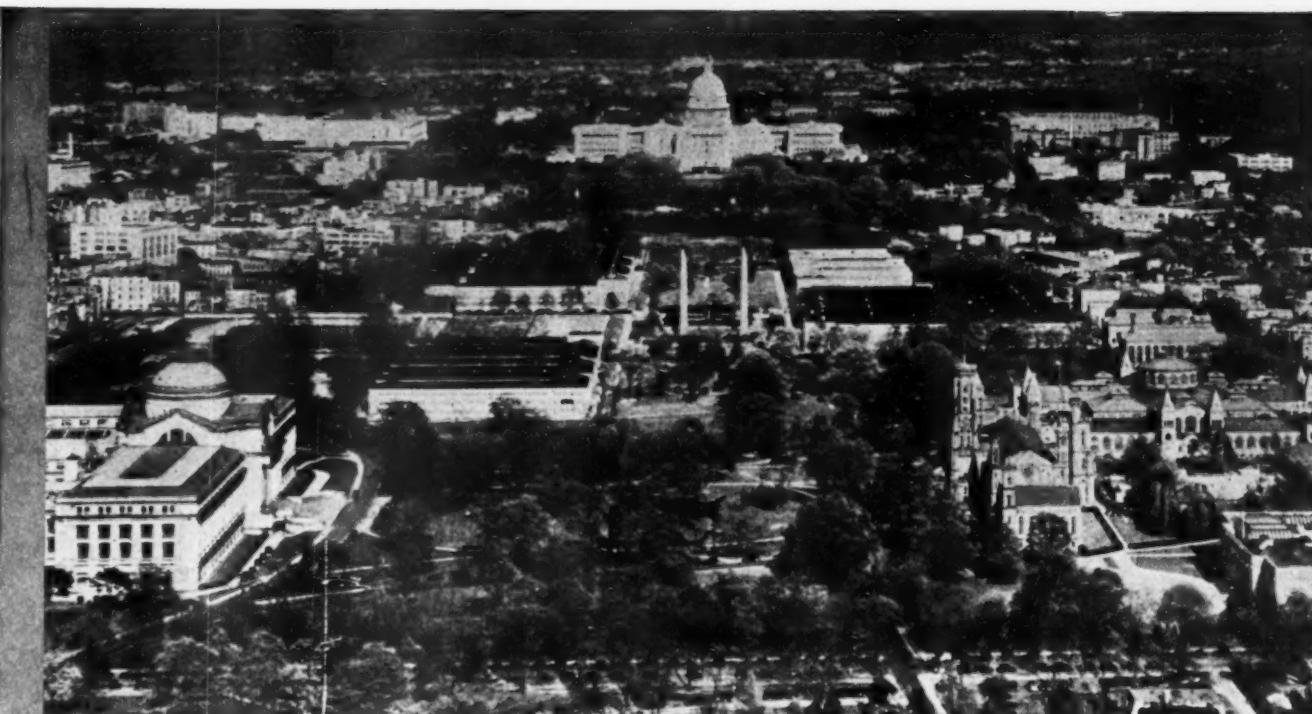


Photo by Ewing Galloway, N. Y.

## CAST IRON WATER MAINS... *laid in 1859 still serve the CITY OF WASHINGTON*

**W**HEN President Buchanan was occupying the White House—two years before the Civil War—the City of Washington, D. C. put down its first cast iron water mains. Today, July 1930, those self same mains are still in active service.

Washington, however, is not an exceptional instance. Prominent cities in every section of the country can point to original cast iron mains still in service. In some cases it has been necessary to replace the old cast iron pipes with mains of larger capacity. But, a number of our oldest cities can testify to cast iron mains in service today after more than three generations.

There is a definite reason for cast iron pipe's remarkable durability. The unique structural character of the metal—nearest to nature of any ferrous metal pipe—effectively resists rust and corrosion. Water and gas mains made of ferrous metal (iron and steel) with the exception of cast iron, disintegrate from rust. Cast iron pipe is the only ferrous metal pipe practicable for underground mains which rust will not destroy.

For further facts about cast iron pipe for water, gas, sewers or industrial uses, address The Cast Iron Pipe Research Association, Thomas F. Wolfe, Research Engineer, 309 People's Gas Building, Chicago.

Cast iron pipe bearing the "Q-check" trade mark is obtainable from the following leading pipe founders: Alabama Pipe Company, Anniston, Ala.; American Cast Iron Pipe Company, Birmingham, Ala.; James B. Clow & Sons, 219 N. Talman Avenue, Chicago, Ill.; Donaldson Iron Company, Emmaus, Pa.; Glamorgan Pipe and Foundry Company, Lynchburg, Va.; Lynchburg Foundry Company, Lynchburg, Va.; National Cast Iron Pipe Company, Birmingham, Ala.; United States Pipe and Foundry Company, Burlington, N. J.; Warren Foundry and Pipe Company, 11 Broadway, New York.



*Look for the "Q-check" symbol stenciled in white as shown above. It is the registered trade mark of the Cast Iron Pipe Research Association.*

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Lakewood Tier-Lift Truck equipped with 12 Timken Bearings—8 in the front and rear wheels, 2 in the differential and 2 in the worm.

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The builders of Lakewood trucks, The Lakewood Engineering Company, Cleveland, Ohio, have considered no compromise in meeting these demands; they have struck straight to the heart of the problem by equipping their trucks with Timken Tapered Roller Bearings, knowing that only the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken-made steel can give users of their equipment the operating economies, dependability, low maintenance and long machine life they have a right to expect.

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**TIMKEN** Tapered  
Roller **BEARINGS**

